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ROGER PEARSON
General Editor

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S.D.I.: A NEW DIMENSION FOR ISRAEL

By Charles D. Brooks

In March of 1983, President Reagan announced his plan for the Strategic Defense Initiative. The President offered U.S. allies the opportunity to participate in the SDI endeavor.

In Israel, the U.S. invitation to participate in SDI was met with great interest. After preliminary discussions resulting in the unanimous support of the Israeli Cabinet, Israeli Defense Minister Yitzhak Rabin formally signed a Memorandum of Understanding with U.S. Secretary of Defense Casper Weinberger signaling a go ahead for Israeli involvement in the program.

The promptness of the Israeli response for bilateral cooperation in the SDI program is indicative of the fact that Israel, having been threatened with nuclear intervention, is perhaps more aware of the ballistic missile threat (conventional, chemical and nuclear) than any other nation. After being caught off guard during the initial stages of the 1973 Yom Kippur War, the Israel Defense Forces (IDF) reversed their setbacks and encircled the Egyptian 3rd Army in the Sinai. The Soviets responded by airlifting two airborne divisions to Syria and threatened the introduction of nuclear missiles on behalf of Egypt. The U.S., in turn, responded with a nuclear Defcon 3 alert and the Soviets backed down. For a short period of time, however, Israelis had to contend with the helplessness of being unable to control their own destiny under the threat of nuclear destruction.

In 1981, when Israeli intelligence concluded that the Iraqis were on the verge of constructing nuclear weapons, they made a decision to launch a pre-emptive attack on the facility which had the potential to produce nuclear grade waste for bombs. The world condemned the surgical strike, but less than two years later failed to condemn the Iraqis on their use of poison gas against the Iranians. The Israelis believed that international law and diplomacy would not have prevented the Iraqis from deploying nuclear weapons if the reactor had not been destroyed. Although Israel is not currently in a state of direct armed conflict with her adversaries, Israel defense planners believe that radical Arab states would have no compunction against using nuclear weapons in a potential engagement.

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The Short-Range Missile Threat to Israel

Israeli eagerness to participate in the U.S. defense program is not lessened by the fact that the Arab states have accumulated weaponry that now totals well over $100 billion. Israel's chief adversary, Syria, has recently revitalized its air force and had been supplied with top-of-the-line Soviet equipment, including MiG 25s, MiG 29s, MiG 31s and SU-27 interceptors. Some 180 Syrian pilots have completed training in the Soviet Union and an additional 30 Syrian pilots have received training for new Mirage-2000 fighters supplied by the French. The Syrian conventional build-up combined with the accumulation of addiitional sophisticated weaponry by other confrontational states now poses a growing strategic threat to Israel.

Most ominous for Israel is the threat posed by Soviet-supplied SCUD-B, SS-12 and SS-21 and SS-22 surface-to-surface missiles. These missiles could destroy Israeli military control centers, storage depots and airfields almost without warning. Virtually all of Israel's airbases north of Jerusalem would be vulnerable to attack and could be neutralized for up to 24 hours, sufficient to permit a military offensive to overwhelm Israeli Defense Forces on the Golan Heights.

Israel currently has 10 airbases that are potentially vulnerable to SS-21 short-range missiles.(1) Ten direct hits by either a chemically-armed or conventionally-armed SS-21 could completely incapacitate a base. The Syrians now possess about two dozen SS-21s. It is not inconceivable in the near future that they might obtain sufficient additional missiles from the Soviets to enable them to knock out all of Israel's bases with a first strike.

Alternately SS-21s could be used to strike major Israel population centers. A surprise attack by such missiles would seriously disrupt the call-up of reserves, the life line of the Israeli Defense Forces. Moreover, according to Israeli Army radio broadcasts in May of 1986, Syria will also soon receive the even more accurate SS-23 which has more than four times the range of the SS-21 missiles and could strike at almost any point within Israel.

The use of surface-to-surface missiles in the Iran-Iraq war has alerted Israeli defense planners to the vulnerability of population centers in any future conflict, and they have determined that Israel's most pressing need is to acquire technologies to

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counter such a potential threat. In the near-term, they regard the Syrian SS-21s as the single greatest threat to Israel, a danger greater than that of the combined airforces of the Arab confrontational states. The American decision to develop SDI as a potential remedy for missile vulnerability has been welcomed by the Israelis.

Israel Benefits from Participation in the SDI Program

The U.S. invitation to its allies to participate in SDI research specifically stated that the program will "examine technologies with potential against shorter-range ballistic missiles." Further, one of the first technologies likely to emerge from SDI research will be for anti-tactical ballistic missiles. Thus, the acquisition of SDI technologies would enable Israel to defend itself rather than to rely upon the risky strategies of pre-emptive attack or deterrence by threat of retaliation.

The development of an Anti-Tactical Ballistic Missile System (ATBM) or a theater defense system offers a near-term deployment possibility for Israel. Interceptor weapons such as kinetic energy kill systems, ground launched hypervelocity interceptor missiles, rail guns, laser beams, particle beams and various other intercept technologies are already being tested in Israel. Indeed, Israel is reported to be already able to deploy a ground-based free electron laser weapon system capable of intercepting ballistic missiles as part of an ATBM system during the 1990s. A single system could defend the entire country and would rely upon ground-based relay/fighting mirrors instead of space-based systems.(2) Defense against SS-21, SS-22 and SS-23 missiles could employ a wide range of current technologies since the trajectories of the missiles are lower, and the speeds are slower than those for ICBMs.

The upgrading of existing Israeli air defense systems to meet the short-term ballistic missile threat would be the first logical step in creating a theater defense system. New technologies being developed in the U.S. are seen as offering great promise as a defense against enemy missiles. The U.S. Navy's "Aegis" acquisition radar, deployed with a two-stage hypervelocity missile currently being manufactured by Rafael Corporation in Israel, could be a first layer of such an ATBM system. Many of the major components of the missile have already been flight tested. Also under consideration are a modified version of

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the U.S. Army's "Patriot" air defense missile and the French "Aster" anti-ballistic missile, which could engage warheads inside the atmosphere.

Proven "off the shelf" ABM technologies, which might also include Patriot surface-to-air missiles, are seen to offer potential for point defense at lower altitudes, with newly devised "Swarm Jets", hyper-velocity rail guns, lasers and various other ground based interceptors serving as a second layer to catch missiles in the terminal phase of their trajectories that permeate the higher altitude defense.

Each of the layers, utilized alone, are estimated to offer an 80% reliability rate, and when combined a 96% reliability rate. Some 500 SS-21 missiles per base, instead of 10 missiles per base, would then be needed to guarantee destruction of each Israeli base. To wipe out all of the Israeli bases would require 5000 SS-21s, which — because of logistics, costs and political and strategic constraints — is an unfeasible number for Israeli's opponents to deploy. By contrast, today, without SDI, it is calculated that they would require only 200 SS-21s to achieve the same results.

SDI Will Enhance Israeli Conventional Warfare Capability

SDI technology will also have a significant spill-over effect on Israel's conventional capabilities. Weapon designs and battlefield management systems will be upgraded as a result of U.S.-Israeli sharing of state-of-the-art technologies (electronics, optics, computers, and energy). Domestic Israeli defense production, enhanced by U.S. SDI contracts and shared expertise, will contribute to Israel's self-sufficiency and to the development of the advanced weapons system seen by Israeli defense planners to be necessary for Israel's survival. Avram Schweitzer, an Israeli journalist for the widely respected *Ha'Aretz* newspaper, aptly described how Israeli defenses can benefit from being involved at the threshold of SDI technologies. Schweitzer stated that "A system that can make out, identity, home-in-on, and destroy an object less than 100 feet long, moving at near Mach 1 speed at a distance of 10,000 miles, is essentially a system, the application of which could do to the foot soldier, the artillery piece, the tank, or the helicopter, what its space-progenitor is supposed to do to strategic missiles. To be in on this kind of technology . . . . could mean the purchase of peace

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for Israel, or more realistically, the imposition, by non-aggressive means, of a permanent state of non-belligerence along its borders."(3)

The Israelis are already researching possibilities of converting offshoots of SDI hypervelocity rail guns onto tanks and armored vehicles. As a result of the development and acquisition of SDI, Israel would be in a better position to update aviation electronics and keep combat command and control systems close to state-of-the-art. The 1982 Lebanese conflict between Israel and Syria amply demonstrated the importance of such components for military success.

Unable to match the quantitative advantage in weaponry accumulated by her neighbors, it is believed that Israeli involvement in SDI should enable Israel to maintain the qualitative edge deemed necessary for survival.

Israeli leadership has always relied on superior technology and military initiative to defend against the massive quantitative disadvantage in weaponry and manpower on the battlefield. However, because of economic restraints, and the influx of Soviet, British, French and even American weaponry to her adversaries, the "qualitative deterrent factor" that Israel has relied upon has eroded in recent years, and increaed emphasis has consequently been placed upon pre-emptive strikes.

Israeli involvement in SDI will lessen the need for a strategy based on risky pre-emptive or massive retaliatory strikes to offset potential military threats. In light of the present trend, Syria could soon be in a position to destroy Israel's fighter aircraft on the tarmac in a suprise attack. At present, Israel's defense experts see only one option, that is to negate any imminent attack from surface-to-surface missiles by making pre-emptive strikes against such missiles while they are still in their launchers, before they can be fired.

The threat of a "rogue attack" is another reason why Israel is keen to acquire SDI technology. Ironically, with the deployment of an ERIS type anti-tactical ballistic missile system, Israel might be in a position to shield the entire Middle East region, including the Persian Gulf states against missile attack. The "foot print," or area covered by ERIS's defensive range, could thus put Israel in the position of a policeman for the entire area, capable of preventing any one Arab nation from attacking another!

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SDI could Serve as Insurance for Israel's Reserve System

The bulk of the Israeli Defense Forces consists of reserves. Since the country is so small, and its standing army is so outnumbered by the Arab armies, Israel has developed an efficient reserve system which is maintained in a state of readiness. Israel has standing armed forces of 174,000, which includes 120,000 conscripts, but on mobilization of reserves, the Israeli Defense Force can achieve a force of around 500,000. The IDF can deploy and fully equip between 11 and 15 reserve divisions within 72 hours (it takes the U.S. 280 days to equip 16 divisions). Indeed, with its highly trained reserve system, Israel can within a short time call up and field an army slightly larger than NATO's standing forces.

But Israel's strained economy cannot withstand the cost of a constant mobilization of reserves. Some military analysts believe that the economic cost of mobilization led to Israel being caught off guard in October 1973, because of its reluctance to mobilize a second time, after having mobilized in reaction to Syrian and Egyptian troop movements in May of 1973. Surface-to-surface missiles could inflict the same kind of damage on the Israeli reserve system as on airbases. An enemy first strike at storage depots, roads and supply lines could serously disrupt Israel's ability to mobilize its reserves.

With an Anti-Tactical Missile System intact, Israel will have a cover for reserve call-ups. Moreover, rather than rely on a costly reserve call-up in any tense situation, SDI technologies will allow more time before the decision to mobilize had to be made.

Economic and Technological Benefits of Participation in SDI Research for Israel

Existing ties between Israel and the United States will be further developed as the SDI program expands. Shared research and development between industries and applications of weaponry in the conventional arena will build a whole new array of relationships between the Pentagon and Israel. The outgrowth of this cooperation will be a heightened strategic cooperation beyond anything envisioned at present.

Israel could also benefit from SDI relationships with other allies who have accepted the President's offer. Great Britain and West Germany have begun discussions on hybrid technolog-

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ical ventures for theater defenses. Israel, in an SDI role, may well be successful in assuming defacto membership in any such ventures.

Israel will derive more than national security benefits from its participation in SDI. The Gramm-Rudman-Hollings balanced amendment could possibly restrict future aid levels to Israel, both in military and economic terms. In such a situation, the awarding of SDI defense contracts to Israeli defense industries could play a major role in substaining and expanding Israel's economic and strategic vitality.

The Pentagon has already signed three contracts with Israel; and research facilities and Israeli firms have already submitted some 150 science and technology proposals along with an architectural project for an ATBM theater defense to the U.S. Strategic Defense Initiative Organization. High tech products already, account for 40% of Israel's industrial exports, the rapid development of SDI-related industries will provide a big boost to further economic growth within the high-tech sector.

Indeed, Israel's industrial future will be greatly enhanced by being at the forefront of this technological revolution. Technological spin-offs could lead to production of new computer systems, energy sources, communication devices, medicines and thousands of consumer products. Moreover, SDI could result in research funds going to troubled Israeli universities, stimulating and vitalizing the Israeli scientific community with new finaicial resources.

Israeli defense related industries will receive lucrative U.S. contracts, strengthening strategic and economic cooperation between Israel and the United States. Major General David Ivry (retired), former Chairman of Israel Aircraft Industries, confirmed that Israel industry is ready and fully committed to playing a significant role in the SDI program. High tech firms such as Ivry's, Technion, Tadiran, Rafael, Elbit, El Op, Elisra, and the Sofek Nuclear Research Centre, etc. will be the likely recipients of the initial SDI subcontracts.

In macro-economic terms, SDI will bolster Israel's economy by creating new jobs and revenues. A prominent American research firm, Chase Econometric Group, has produced a study revealing that for every billion dollars invested in space technology: over 800,000 new jobs are created; the inflation rate is reduced by two percent, and the Gross National Product is

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increased by $23 million. This study is modeled upon U.S. industry and the economic impact on the comparatively tiny Israeli economy may be even more profound. Benefits will also accrue to non-military related industries. According to Business Communications Company of Stamford, Connecticut, the estimated commercial value of SDI technology could yield spin-offs valued beteeen $5 and $15 trillion.

For Israel, a small nation with a highly educated work force, the economic benefits of the proposed U.S.-Israeli program will be immediate and exponential. New opportunities in high tech jobs will discourage Israeli scientists from leaving the country to seek better opportunities in the West. In fact, an expanded high tech industrial base in Israel will provide to be an attractive incentive for Jewish scientists abroad to move to Israel. Viewed from every angle, the economic benefits of SDI research and technology to Israel should be as important as the strategic benefits.

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LONG RANGE DEFENSE PLANNING

by Robert C. Richardson III

The one thing that all organizations attempt to do but that few do well is planning for the future. The military spends many man hours writing plans. Planning is essential to the conduct of most business and government activities. Good planning can provide guidance with respect to what should be done in the near term, and this is where it has been useful if not essential. Unfortunately the ability to do useful planning declines dramatically as the planning period lengthens.

As a rule of thumb we can say that short range planning that looks ahead over a period of 2 to 5 years is relatively easy to do. Medium range planning that tries to look ahead for 5 to 10 years has generally been far less successful. The record with respect to useful long term plans that try to look ahead beyond 10 years is dismal, especially in the military. Most such past efforts served few if any constructive purposes and wound up in the archives as paper excercises.

In the past the inability to do useful long range planning in the defense sector was not especially critical. Today the situation is quite different. The acquisition time, that is the time it takes from concept to deployment, for most space systems and other high technology weaponry now averages between 10 and 15 years. Getting fundamental changes accepted in policies, strategies, organizations, and doctrine can take a decade or more for reasons discussed below. And, factors which in the near term do not change sufficiently to invalidate short or near term planning – such as population growth or supplies of key resources, can have a major impact in plans covering 15 or 20 years.

If in theory planning is to serve the purpose of achieving national goals, and if the major purpose of plans is to provide guidance for activities such as weapon procurement, or changes in policies, strategies, organizations, etc., that will be required to maintain or achieve these goals, then the planning period should obviously exceed the time it takes to implement such activities or bring about such changes.

Now that the weapon's acquisition cycle has stretched to over 10 years, long range defense plans must look forward at least 20 years if they are to provide useful guidance. This

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means that there is a new and urgent requirement to adopt a planning process that has some prospects of producing valid 20 year plans.

In practice the extension of the acquisition cycle for military hardware to over 10 years, when coupled with the inability in the past to do long range planning that has any validity for more than 4 or 5 years, has brought about a situation in which military hardware decisions tend to be decoupled from the national security requirements that should determine these. When this happens technological feasibility tends to determine weapon selection rather than policy determining what weapons should be developed and acquired in order to cost effectively implement it. This also makes it difficult if not impossible to sustain the justification, hence funding, for new weapon systems when these are proposed before we know why we will need them.

Based on experience with past long range planning efforts, and past studies made of the process, I suggest that a lack of understanding and consideration of three fundamental factors is largely responsible for the failure of most past efforts at usefully "charting future strategy and (weapon) requirements" for at least 20 years into the future. These are:

> First, the inability or unwillingness of the planners to forecast changes at set foreward dates in anything but hardware.
>
> Second, their failure to recognize that tasks and strategies are also variables and must be changed or up dated along with the weapons and forces and,
>
> Third, the failure to understand that the method or approach adopted by the planners to chart the future is a key element in arriving at valid and acceptable, hence useful, findings.

On Forecasting only Hardware Changes

With respect to the first two factors, USAF studies of the long range planning process undertaken in the 1950s concluded that the principal reason behind the inability to produce valid guidance was the failure to deal in similar fashion with the two major components that make up defense plans, both of which change as time goes by.

The two components are: a) the changes that can be anticipated or achieved during the planning period in military weapon

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systems – the hardware for warfare and, b) the changes that can be anticipated or are likely to occur during the same period in non hardware areas such as strategy, policy, assigned tasks, organizations, tactics, doctrine, etc. – what we might term the "software" of warfare.

As obvious as it is that both components change over time few if any plans can be found that envision changes, at set forward dates, in anything but hardware areas. Defense the planners seem to be unwilling or unable to project, or call for, changes in tasks, strategy, policy, concepts, or organization in out years, that is at "downstream" dates. They generally assume that all software factors in effect when they write the plan will remain valid forever. Not only do they rarely attempt to forecast changes in these in the future but they also studiously avoid suggesting that those in effect might not be sound to start with.

At the onset of NATO, in the late 1940s, no military planners were allowed to suggest that the defense of Europe should be based on the use of tactical nuclear weapons even though these were then being developed and could be available in the time frame addressed by the initial defense plans. It was only when economic limitations made it clear, at NATO's Lisbon Conference in 1952, that Europe could not be protected by conventional forces alone that President Eisenhower initiated a planning cycle that led to the 1956 NATO Political Directive calling for a NATO strategy of nuclear response to Soviet aggression from the onset.

All U.S. defense plans written before 1983 assumed that the U.S. strategy of Mutual Assured Destruction (MAD) would remain valid forever. None challenged the validity of the ABM Treaty. Yet, anyone that has subsequently heard all the arguments for the President's 1983 decision to move away from MAD and build strategic defenses (SDI) cannot but realize that all these arguments were equally valid and readily perceivable before 1983.

The shift in the strategic nuclear balance that led to the need to adopt the new Reagan strategy in order to perpetuate deterrence, along with the advances in space technologies that made effective missile defenses possible and cost effective, should have been sufficiently obvious to have caused security plans made in the 1970s to recommend strategic defenses

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instead of waiting until the President proposed these based on studies by groups outside of government such as High Frontier. Instead such plans as were made have obviously proved useless as guidance for the late 1980s and 1990s by virtue of failing to even suggest that due to the above developments both MAD and the ABM treaty would make no sense within the next 10 to 20 years.

By the early 1980s even short range plans should have suggested that trends in the Soviet build up, U.S. deficits, space technologies, and public demand for protection from nuclear accidents would create conditions under which U.S. strategy would require changes if U.S. defenses were to remain effective and affordable. None did. The facts were there for all to see yet even medium term plans failed to forecast, let alone call for, changes which were bound to come about.

Today no official defense planning I know of has as yet addressed the possibility that the Soviets may seek to acquire the ability to deny the U.S. and its Allies access to and from space early in the next century. The historical evidence that control of the seas, and later of the air, were decisive in determining national power and victory in wars is overwhelming. It is therefore obvious that when technology produces the means to control near space this new arena will play the same decisive role in national security that control of the air and seas played in the past. To ignore this in official plans and defense budgets, and risk surrendering space control to the Soviets who are not making this mistake, is nothing short of irresponsible. This is especially true when we know that space control is an admitted Soviet goal and that the technological means of achieving it are near at hand. A 1984 U.S. Defense Intelligence Agency Report concluded that:

> The Soviet Armed Forces shall be provided with all resources necessary to attain and maintain military superiority in outer space sufficient both to deny the use of outer space to other states and to assure maximum space-based military support for Soviet Offensive and defensive combat operations on land, at sea, and in outer space.

What one must conclude from the past reticence on the part of military planners to facing up to all the evidence of likely or desirable changes at future dates in strategies, policies, tasks, and other software areas, is that the guidance produced by such efforts will be useless at best and may even result in dangerous

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mistakes and wasteful decisions at the expense of both the U.S. taxpayer and U.S. security.

The real culprit in bad long range planning has been the inherent resistance to even considering the possibility of change in the realm of "software" while all too readily accepting change in the realm of military hardware. Change in the latter is welcomed and wanted. Changes in the former threaten reputations, roles, missions, individual or group security, etc., and as such are resisted. The result of this is that, as time goes by, a growing gap develops between available hardware and the strategies, concepts and policies that govern its uses. The longer range the plan, the greater the gap. In most past efforts at long range planning the size of this gap is a major indicator of the worth of the effort.

The chart on the evolution of strategy versus hardware, which was taken from the 1959 USAF study previously mentioned, depicts the situation that always arises from this problem. It depicts how hardware tends to evolve in performance and cost along a smooth hyperbolic curve while strategies tend to remain constant for years until pressures generated by the growing gap, or real wars, overcome the inherent resistance to changing these.

The validity, hence usefulness, of any long range plan thus varies with the size of the gap between the projected hardware and the projected methods for its use. This gap will invariably increase with time unless the planners also project changes on the concept, strategy, and policy side that govern how and where the new hardware will be used – changes that inevitably occur in real life but are consistently ignored in long range plans.

Manipulating All the Variables

The 1959 USAF studies on the planning process I previously referred to also concluded that there were basically three different categories of plans: Requirement plans, Emergency plans, and what we came to call Capability plans. To many people the last two tend to be seen as the same although in fact they are not. The difference between these categories lies in which of the three elements that make them up is treated as the principal variable.

All military plans, including the above, involve manipulating

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three basic elements:

First, are the JOBSs that must be accomplished. These are the assigned tasks or missions. eg: Hold forward in Germany, or hold on the Rhine, or gain control of the seas, or protect US ICBM sites, or secure the Persian Gulf, etc.

Second, are the METHODS by which the jobs will be accomplished. These are the strategies, tactics, doctrines, and policies which determine how the jobs will be done. eg: With conventional forces with atomic forces, by deterrence, under a MAD strategy or under one based on active defenses (SDI), etc., and,

Lastly, are the RESOURCES available to do the assigned jobs with. These are the forces, weapon systems, and support systems, or in the case of long range plans the funds likely to be available to acquire these with.

These three elements that make up any military plan can be looked at as part of a simple equation in which their sum has to equate to any given threat estimate. The task + the strategy + the means = the threat. All three of these factors are potential variables. If the enemy ups his forces you can up yours (classic arms race) or, you can cut back on the size of the task (abandon the Persian Gulf), or you can change your strategy (abandon conventional in favor of nuclear defenses). The variable one wants to emphasize determines the type of plan to be developed.

Requirements plans are designed to vary the resources — the forces and weapons. They are used to answer the question: "What forces and weapons do I need to meet an estimated threat. The strategies or tactics to be used, (eg: conventional or tactical atomic defenses), and the task to be undertaken (eg: hold the Rhine, protect Japan, etc.), are essentially givens, not variables. They are either those currently accepted as doctrine at the moment, or politically directed. Requirements plans rarely if ever call for substantive changes in these.

Historically, the military prefers to use the requirement planning process to meet any and all changes in threats. This approach almost always results in justifying increases in forces and weapons and defense budgets. It essentially involves meeting a new or greater threat by merely "throwing money at the problem it presents." It frees the planners from having to face up to defending untested new strategies (like SDI), or from

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challenging political aspirations (like no use of nuclear weapons), or from admitting to an inability to achieve all foreign policy goals (like who or what to protect) for lack of sufficient forces.

Emergency plans are, almost by definition, limited to varying the tasks or missions accomplished by the forces. Why? Because these are stuck with the means at hand and the methods in vogue at the time when the emergency occurs. They answer the question: "What can I accomplish given my currently accepted doctrine and with the forces and weapons I have, or will have, in the event of an attack?"

In an emergency situation you have to fight with the force levels, weapons, and concepts that you have at the time. The only variable is whether these can do the job or task. E.g.: can you hold forward in Germany as directed or do you have to change the task to holding on the Rhine or on the Channel.

Capability plans are designed to vary the method adopted to do the assigned defense tasks or missions. They are almost always medium or long range plans. In these plans the planners are given the resources, generally as a ceiling, in money if not men and weapons, and they are given the tasks and missions to be accomplished. The question they are then asked to answer is: "How can we accomplish the assigned missions or tasks, in the accepted manner, and within the given level of resources.

The only variable the planners have to work with in a capabilities plan is the method by which they think they can accomplish the assigned job(s) within the given resources. E.g.: lacking the money clearly needed to build and protect enough missiles to retaliate after a Soviet first strike (MAD) their plan might call for a new strategy involving a U.S. first strike, or firing what we have on warning, or else building missile defenses (an SDI) to deter the Soviet strike in the first place.

The capability process is the least well understood, least frequently used, and most resisted of the three planning processes. The military invariably resist it. Why? Because once the planners have determined that any defense job can be accomplished with less forces, or at less cost, by some new method (strategy, tactic, etc.) the services involved will never be able to justify more funds or forces for this or similar missions.

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The capability planning approach was used in the early 1950s to do NATO's New Approach plan that led to the adoption of the 1956 NATO strategy of "Tactical Nuclear Response from the Onset". Being unable for economic reasons to match Soviet conventional mass in Europe following WW II we changed the strategy, the method of defending Europe, to one that relied on nuclear firepower. The military leadership in the U.S. resisted this approach at the time but the alternative, Allied recognition that NATO could not provide for the security of Europe, led President Eisenhower to essentially overrule their parochial objections.

Interestingly, while not recognized as such, SDI is the product of a capabilities approach to meeting the President's election mandate to recover and maintain rough military equivalence with the Soviets, but without having to pay to match the continuing Soviet strategic nuclear missile build up.

When it became clear in 1981 that the Congress was going to be unwilling or financially unable to fund the force levels and passive defense schemes proposed in order to maintain parity in a MAD arms race, High Frontier suggested that the Reagan Administration cope with this new and growing threat by changing the method of ensuring continued deterrence. This would be done by adopting a strategy based on missile defenses and on our space technology advantages. The new strategy would then deal with the growing Soviet build up by end running and obsoleting it with U.S. technology rather than by chasing after it with ever more defense money. This was a capabilities approach to planning U.S. security for the late 1980s and thereafter.

Useful Long Range Planning

Long range planning can be done under either a requirements approach or a capability approach. Which is adopted should depend on what the planners believe they can count upon as reasonably valid estimates of conditions, constraints, and resources at the outer limits of the planning period – say in 15 or 20 years.

We know from experience that merely projecting existing forces, concepts, strategies and policies into the future, while making changes only in the weaponry likely to be available due to technological progress, will produce useless plans. This type of planning should be properly called "program projectionism '.

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From this we can also deduce the fact that basing long range plans on intelligence estimates of the threats that are likely to be facing the U.S. 15 or 20 years hence also produces useless plans. This last conclusion is heresy to many planners who believe that the proper way to go about the business is to ask the Intelligence community to forecaste the threats and then plan to respond to them.

The threat assessment approach does not work in long range planning, partly because no one can forecast with any degree of confidence how or to what extent it will change over the years, and partly because the intelligence planners, being unable to do this, invariably define the threats by the process of projecting and increasing the present day threats, that is by the very "program projectionism" method that does not work for us. When this occurs our threat reaction plan becomes in effect a "program projectionism" effort by other means. Having boldly said we would adjust our capabilities to meet the threat, rather than merely projecting our own existing forces out into the future, we use a projection of today's threat to determine these. This in effect causes us to meet ourselves by going around two sides of a square.

One rule of thumb for defense planning is that intelligence estimates are: 1) essential in Emergency planning, 2) useful and important to near term Requirements planning, but 3) useless for any plans whose time frame exceeds the length of any current opponent's weapon system acquisition cycle. Intelligence can only report upon that which exists. They can warn us about weapons that are under development, being tested, or in production. They can tell us about forces in being or being trained. They cannot be expected to anticipate decisions our enemies themselves have not as yet made. Intelligence experts are no better than planners or anyone else when it comes to guessing what either side may or may not decide to do in the future.

If valid long range plans cannot be based on estimates of the likely threats in the time frame, nor on projecting current force and weapon programs, strategies, and policies, then on what can they be based? on? This question was addressed in the 1959 Air Force planning process study and an approach was suggested. This approach was first called the "Utopian" approach and subsequently the "Plato" approach after that taken by the Greek philosopher Plato in defining the defense

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establishment for his "Republic".

The Plato Approach

If a long range plan is to be useful, the future environment that it envisions must be one that we have some reason to believe will in fact exist in the real world in the out years for which we are planning. Since obviously we can't forecaste the future accurately, the next best thing is to identify, in order of priority, those factors that we must consider in our plan that we have the best prospects of defining. We can then use these as "anchors to the windward". Where we cannot define with any confidence factors we need to assume, we can then use optimum conditions, rather than estimated conditions, for that time frame.

The basic principle in the Plato approach is to go on the theory that if we can define an optimum capability no enemy(ies) is likely to be able to have a better one. This then solves all conceivable threats without necessarily having to know years in advance just what they will be. In this approach the planners start out with those factors that they can define with some degree of confidence. These include factors such as population levels, resources likely to be available for defense, and estimated technological progress translated into possible weapon systems. Instead of concentrating on who our enemies might be, or what they might decide to do, we concentrate on what our own environment will be and on what we might be able to do under realistic assumptions.

In the case of military hardware — the weapons we might have in the timeframe — we ask our most qualified scientists in each key discipline: What do you feel confident could be available in your area of expertise, given money and priority, in say twenty years. Space ships? Laser weapons? Lunar bases? etc. What we try to define to start with is a shopping list of the very latest capabilities and weapons the technology of the times might provide and a real world estimate of the nature of the overall environment in which our selection from this list would be used. These inputs are then used as the starting point for our planning.

Demographic factors such as population growth can be fairly well forecast for at least twenty years as can raw materials and some resources — though not access to these. Economic prospects and constraints can also be estimated. We can assume that

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some percentage of the GNP would be available for defense or could realistically be used as a ceiling for planning defense activities and we can project the growth of the GNP.

In the Plato approach we ignore the threat on the grounds that we cannot realistically forecast it with any degree of confidence. We also ignore both overall force levels and deployments since we can't define the threats on which these must inevitably be based. Instead we use the building block or cellular approach to determine what weapon systems we will procure and how these might be used in combat situations in that time frame. What we want is optimum warfighting elements, units components, or building blocks that can be combined as appropriate to meet any possible combination of threats using roughly similar technologies. The quantities and deployments of the elements would then be subsequently determined as threat information became available at later dates.

Having designed an optimum force posture to fight anyone anywhere on a building block basis we then make a separate study of the problem to transitioning from the present date force posture to what we defined as the goal by the end of the long range planning period selected. Transition planning must be done as a separate effort. If it is attempted as part of the basic long range plan its impact on issues such as roles and missions, force levels, service tradition, doctrines etc, are so unpalatable or destabilizing as to adversely influence the acceptability and objectivity of the planning effort. This is generally the case for any Capability type of plans since these inevitably impact upon the above issues.

An example of the separation of planning and transition efforts can be found in the 1952/54 NATO New Approach planning cycle. Subsequent to completion of the Capabilities plan a separate paper entitled "Measures to Implement" was completed. Since the purpose of the effort was to define a strategy that would allow NATO to have a credible defense posture without having to maintain rough military equivalence in conventional forces with the Warsaw Pact it was obvious that any solution that solved this problem would establish a way in which a credible defense could be had with less forces hence for less money. Amusingly enough some senior officers who had approved the plan later admitted that had they realized what it would do to their doctrine and force and weapon requirements,

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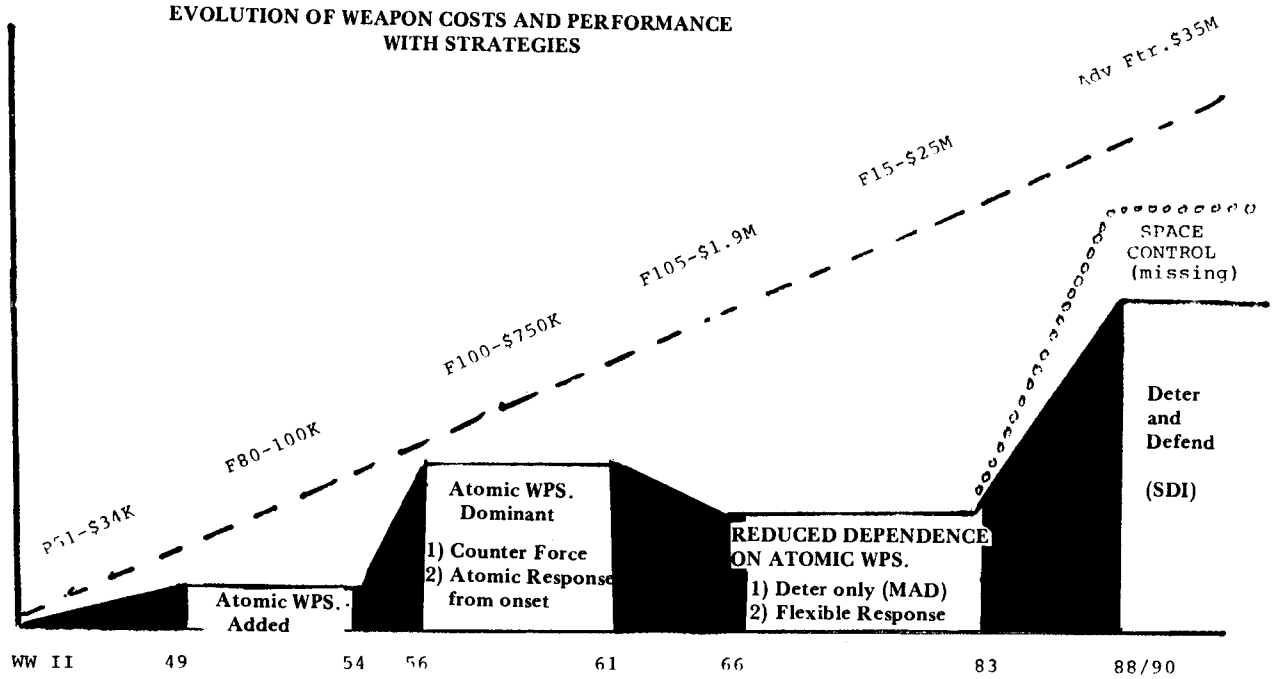

they would never have agreed to it in the first place!

Another major constraint to sound long range planning, especially following an extended period of peace, is the fact that the national security posture, strategy, tactics and forces are almost certainly less than the optimum in the present. The lack of sound past long range planning, coupled with the increasing proclivity of government to introduce political, economic, arms control or other non defense considerations into decisions effecting its military capabilities, has led to military establishments and defense postures that are far from optimized for fighting in actual wars.

How this situation came about in the past is explained below. Its net effect is that the new plans which are assumed to provide sound guidance with which to adjust the nation's defense capabilities from the present to the stated future date, serious slippage when it comes to achieving the plan's goals.

Another major constraint to sound long range planning, especially following an extended period of peace, is the fact that the national security posture, strategy, tactics and forces are almost certainly less than the optimum in the present. The lack of sound past long range planning, coupled with the increasing proclivity of government to introduce political, economic, arms control or other non defense considerations into decisions effecting its military capabilities, has led to military establishments and defense postures that are far from optimized for fighting in actual wars.

How this situation came about in the past is explained below. Its net effect is that the new plans which are assumed to provide sound guidance with which to adjust the nations defense capabilities from the present to the stated future date, say from 1987 to 2010, very often wind up, in the real world, calling for adjustments ranging from the dates when past errors were made to the future. E.g.: in this example 1961 to 2010! Obviously this makes the transition more difficult and less palatable than it would be if we were able to start from an optimum posture in the first place.

When this occurs, as has generally been the case, the end product of a Plato approach is to produce the optimum guidance and posture for national security at some future date, but one which is likely to be so far removed from what we actually have now as to be unacceptable to most political and military leaders, many of whom have little imagination and no will to

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risk dramatic changes even when and where they are logical and clearly needed!

Translated on to the present scene, as an example, the U.S. should have been developing, deploying, and improving missile defenses since missiles were first tested. We should have been establishing one or more bases on the moon ever since the end of the Apollo program. We should have pursued all of the "cutting edge" technology porgrams initiated in the late 1950s in response to progress in space, missiles, and atomic weaponry instead of sacrificing many of these on the altar of risky arms control aspirations as was done in the early 1960s.

The Plato approach does not guarantee success. It, or some variant of it, is probably the best approach yet devised to get sound and useful guidance from any long range planning effort. At minimum it provides a way by which the planners can forecast changes in both hardware and software and defines the major prerequisites of an optimum defense posture.

The "Tree" Model

Another way to recognize the types of problems that face our long range military planners today, (and no doubt Soviet planners also thoughto a different extent), is to compare the evolution of the nation's defenses to the growth of a tree.

A tree grows twigs on its branches each year. These are the equivalent of new proposals in each year's defense budget. Each year both are evaluated and pruned. Some are allowed to continue to grow (funded) and some are cut off. After ten or twenty years those twigs that were kept become big branches. In the case of defense they have evolved into major weapon systems or accepted new strategies.

But, the assumption in most such yearly pruning operations is that all past decisions as to which twigs to keep and which to prune away were sound. Only when the twigs are relatively young and new is serious attention given to cutting them off. Those that survive the first years prunings tend to grow into bigger and bigger branches. Once this occurs little or no serious attention is given to eliminating them along with the undesired new twigs.

For this system to produce optimum results in either the tree's eventual configuration or the cost effectiveness of our defenses, we have to assume that no mistakes are ever made in the yearly twig selection and pruning process. If, as is often the

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case, mistakes are made then we wind up with having to decide what to prune or keep not only among the twigs but also among the branches. All the twigs on a bad branch present us with a "choice of rotten apples". To keep any of these all but precludes sound future planning in that all projections of these branches into the future are unsound. To then recover a sound posture or configuration we have to face up to cutting off the whole bad branch — something few if any are willing to do either with trees or heretofore accepted weapon systems or policies.

One might take as an example of this situation the continuing yearly debates over force deployments, weapons, and funding in NATO. These all stem from efforts to implement a strategy of Conventional-Flexible Response that was established in 1966 and which blithely accepts the assumption that a sustained conventional defense is feasible or has any security value now that the Soviets have tactical nuclear weapons. The acceptance of this NATO strategy came at the end of some five years of efforts by the McNamara regime to abandon the 1956 NATO strategy of Nuclear Response from the onset and were dictated more by political and anti-nuclear attitudes than by sound military plans and common sense.

Most if not all of America's NATO allies resisted the 1966 change as being designed to cater to U.S. anti-nuclear and conventional defense aspirations rather than real world defense requirements for Europe. The French even ridiculed it. One of President de Gaulle's top strategists and military writers General Pierre Gallois referred to it as "Les Sophismes de McNamara." This proposal was certainly a factor in de Gaulle's decision to pull his military out from under NATO planning.

Whatever one may think of Conventional Flexible Response as a strategy for the defense of Europe it was clearly not devised or sold as the best military solution in 1966 and nothing has happened since that has made it any sounder from a purely military point of view. Instead it has become more costly and less realistic as Soviet tactical nuclear capabilities have improved over the years. As such it is an excellent example of a classic bad twig that has been allowed to grow into a branch that no one challenges anymore. New generations of national and NATO planners never knew, or have forgotten, why it was adopted in the first place. Their plans now accept it as being presumably valid forever, and this notwithstanding NATO's

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obvious and admitted inability to logistically sustain a conventional defense for more than a few days or weeks, nor the absurdity of assuming that the Soviets would allow NATO conventional forces to defeat their aggression rather than resort to the nuclear weapons they have available.

While I obviously do not think much of the current NATO strategy my purpose here is not to argue with it but to use it as an example of how a past decision made for reasons other than optimum defense purposes can become a big branch of the defense establishment's tree whose twigs are wasteful and costly and whose likely retention without question in all classic long range planning guidance cannot but result in bad security decisions and wasteful defense spending.

The Way to Go

Security planning need not be a complicated process. To produce sound and useful plans, however, requires a few simple, common sense decisions.

First these plans must avoid at all costs blindly adopting complex courses of actions or those dictated by non-military – political, arms control, academic, or other aspirations. Over reliance on conventional defenses in the atomic age is a classic example of this. Adherence to the concept of Mutual Assured Destruction (MAD) even after it has obviously been invalidated by the shift in the strategic nuclear balance in favor of the Soviets is another.

Proven principles of warfare and historical precedents must not be ignored or violated unless and until these can be conclusively proved to have been overtaken by events or new technology. A classic example of this can be found in the present tendency not to plan and develop forces for eventual control over access to and from space, when the ability to control the high ground, seas, and air has always been decisive to survival. What is different about space that permits us to ignore this historical experience when it comes to providing for the future security of the U.S.?

Finally, effective long range planning will require the adoption by the planners of approaches that minimize if not eliminate the tendencies and pressures to merely project existing military hardware, concepts, strategies, organizations, and force structures into the future on the assumption that it is not politically palatable to challenge or change these. To avoid

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doing this the planning process should be one that decouples in so far as possible the present from the future, defines an optimum future posture based only on building blocks we can confidently predict, and then links the present to the future postures with a separate transition plan or program.

Long range defense plans and studies that ignore these principles should bear a disclaimer that reads: "Even if dumb this will still be our strategy!"

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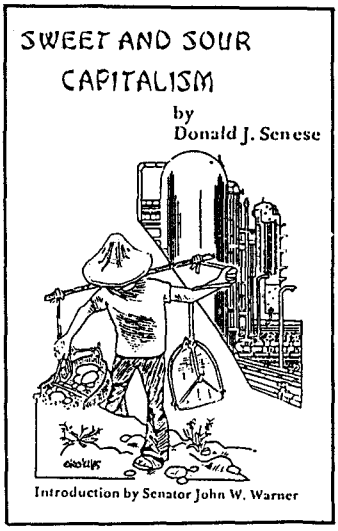

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SPACE: THE NEW ECONOMIC FRONTIER

by Klaus P. Heiss

The theme of the 1986 International Astronautics Federation Congress, "Space for All People", held at Innsbruck in October, 1986, was both challenging and promising. The most advanced industrial nations are currently encountering serious difficulties in assuring the very access to Space, something taken for granted for so long, even forgotten by some as an issue. The problems of the United States are well known. The problems of the European launcher family are known as well. Quite recently two major missile launch failures were reported to have occurred in the Soviet Union, one military missile allegedly hitting Chinese territory by mistake. This was later denied. Even if the current difficulties are overcome, the access to Space will remain an expensive proposition for some time to come.

Despite these difficulties, however, Space holds tremendous promise for mankind. In these remarks I will attempt to briefly outline the basic economic promises of Space, the overriding importance of these to developing countries, and elaborate why these promises to date and in the future can only be achieved with the establishment of free market principles for Space activities. It is the theme of this paper, that Space indeed is meant to be there for all people, not just governments and bureaucratic monopolies, which to date have denied such access to private enterprise and, thereby, also to developing nations.

I. On Space Commercialization

First, some brief remarks on 'Space Commercialization': let there be no misunderstanding on this issue. If governments had allowed the ventures in Space transportation to go forward as proposed by the private sector in the late 70s and early 1980s the United States would have today:

1) A brand new orbiter rolled out in June of 1986, Orbiter V, that we now scramble to finance. This orbiter would have been paid for entirely by private funds, with simple and fair conditions as to its uses. This orbiter would have been built for

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about $1 billion, with a 'buy-back' right by the government in case of emergency government uses of the orbiter – for $1.5 billion.

The discussion today would be about the 'exorbitant excess profits' made by the private sector and the $500 million in windfall profits; allegations would be made that the private sector 'stole the Washington monument' etc. Instead the situation today is that taxpayers will be 'robbed' of about $3 billion for the same orbiter, which orbiter will not be available for flight before 1991 or 1992. This is economics lesson number one, as to what the private sector could have done, indeed had arranged to do, if only the government had allowed the private sector to proceed. I do not want to hear again that the private sector was not courageous, had not proposed this in the interests of the United States, or that the private sector was not proposing to take enough risk, or that it proposed too much of a return to its investment: these latter are the reasons given by government in public testimony when it turned down the private funding of Orbiter V in 1983! The only fair share the government should ask of the private sector in Space and on Earth is the tax the profits made. That is the fair share of government, nothing else.

2) We also would have today four Titan 34 Ds financed by the private sector, coming out at a rate of four a year, at roughly half the cost of what the government has to contract for today for the same vehicles, because of restart costs and loss of production continuity.

That is economic lesson number two in Space transportation. Not only had the private sector proposed to provide the additional Shuttle capacities, but also to provide – at private cost – the necessary backup with "expendable" launch systems, the return family of launch vehicles. Instead we are stuck now here on the ground, not because of a failure of private enterprise, but because the government resisted and did not allow the private sector to proceed in Space transportation.

II. Positive Achievements of Space Todate

The achievements in Space enterprise todate are several, very significant contributions to the well being of all of us. Among the contributions I would list:

1) The 'Global Awareness' that we have today. Probably the single most important economic – and other – contribution

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Space has made is the image of the Earth rising above the moon. This has driven one message home: Earth is an extremely vulnerable "soap bubble" ready to "burst" at any moment. The fact that today indeed we have global discussions on the environment, the economies, on information, on military and national security issues, and in many other areas, I attribute foremost to that one image taken on the moon by man. What to us economists was but an abstract notion — the worldwide interdependence of economic systems in open world trade — was shown here in one simple picture. That one image to me, an economist, justifies the Space program and all the costs we sank into it todate, and in years to come.

2) The second major benefit of the Space program has been the stability brought about in international strategic relations, thanks to information gathered independently from Space by the major powers. I do not want to rewrite or reinvent history — others are better at that. But the outbreak of wars, global wars, strategic wars in this century, can be attributed first and foremost to a lack of information, the uncertainty as to the intentions of the major adversaries, e.g., before World War I. The likelihood of any large scale, major strategic conflict for the rest of this century I claim is zero. The reason for this is Space and the information it provides: independent, verifiable information. That has been, and will continue to be, the second largest benefit of Space for the United States and for mankind.

3) Ranked third in terms of significance of benefits from Space activities are global communications. The world today is so radically different from the world of the 1950s because of instant, global Space communications: While other means of communications now exist, the fact that today we are a worldwide, instant information society is due largely to Space communications, and the commercial approach to Space communications at that. It is the only area where we chose the commercial route, with the creation of Comsat in 1962 and later Intelsat. Even the Soviet Union has now applied for membership in this most commercial of all international organizations.

The benefits of Space communications are "radical", widespread, and taken for granted today. But they are there nevertheless. I do not want to quantify these benefits for the moment. Others have done that, and I have done so elsewhere.

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III. Constraints to Expanded Space Activities

Yet, despite these vast benefits of Space today the U.S. is grounded, thanks to government failures and inactions. We cannot launch; if we had operational launch vehicles, we cannot get insurance; if we could get launchers and insurance, we cannot pursue Space observations, because of the 1984 Landsat Remote Sensing 'Commercialization Act', which disallows private property rights to original Space data, even if privately funded (Title 4 of that act).

And finally, if we did reach the Moon again, or any other celestial body, we could not take possession of the resources there, so why go to the Moon and beyond under the UN Outer Space Treaty?

From this I conclude that serious constraints have been imposed on the commercial and beneficial uses of Space and private enterprise. These constraints have to be removed. I will come back to those basic principles later.

In addition to these statutory and bureaucratic constraints, there are other, real economic constraints – i.e. costs – that hinder the full development of Space. These are:

1) *Transportation Costs.* Space transportation costs are real, and they are high. The vision in the early 1970s of a fully reusable Space transportation system is still there to be fulfilled. Today we only have a partially reusable Space shuttle, once it is allowed to operate again. We never developed a reusable upper stage as recommended in 1972. We do not have a fully operational space transportation system. A Shuttle launch today is still an individually engineered, handcrafted event. We have to get from here to where we thought we would be getting in the early 1970s to achieve a low-cost, reusable space transportation capability.

Radical advances may be possible in Space transportation, indeed are needed in the decades ahead, possibly based on some of the technology breakthroughs and advances envisioned in kinetic and directed energy technologies envisioned by the Strategic Defense Initiative. Laser propulsion may at some time in the future allow ISPs of 2000 or more and thereby radically lower Space transportation costs. In the meantime, gravity does exist and we cannot wish it away. Transportation costs will put a severe limit on Space enterprise – and on how far we ever will go in Space for economic benefits on Earth.

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2) *Interest.* Just as physicists cannot do away with gravity, economists cannot do away with the cost of time – interest. This cost of time – or the cost of the use of capital – is a truly universal cost inherent to any civilization, wherever that civilization may be. While there may come the day of "anti-gravity" technologies speculated about in science fiction and advanced courses in theoretical physics, the cost of capital is an immutable fact – similar to the second law of thermodynamics. Any civilization has interest costs – there is a cost to time. The more innovative a civilization, the higher this cost. Interest is the "economic gravity well" out of which there is no escape, and which will limit very far-flung uses of resources even within our solar system, and certainly beyond that. For example, going to Mars and backover a three year period in a $1 billion spacecraft with three astronauts will impose an interest cost of about $300 million, or $100 million per astronaut. This cost exists, whether it is explicitly paid for or whether it is born by taxpayers. One cannot do away with this cost, even if anti-gravity machines existed. As long as it takes time to go from here to there and back, interest costs exist and are a serious obstacle to the economic uses of resources that travel at less than the speed of light. (Two such commodities exist – information and solar energy – and these are discussed below).

3) *Demand.* Demand is a "constraint" to the uses of Space resources on Earth. What I mean by that is that the Earth is abundant in most mineral resources. If we had today, say, a huge asteroid of pure platinum to be landed at Edwards Air Force Base, it certainly is not likely to have paid for the costs of the mission to capture and recover such an asteroid: the first, and probably only, thing that would happen is that the prospect of a successful landing of such a massive asteroid would lead to a total collapse of the platinum price on Chicago Commodities Exchange, down to about zero. The economics of the uses of lunar or other celestial mineral resources is seriously limited, even at zero transportation cost: demand for most commodities is at most "unit elastic", meaning that one spends about the same budget on that commodity, irrespective of price. That is true for wheat, for food crops, and it is also true for mineral resources. The 'Club of Rome' of the 1960s was wrong, the market was right. The world today is overabundant in resources. Anybody who doubts that should call the Chicago Commodities Exchange and ask what happened to the prices of

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resources – wheat, barley, oil, energy since the 1970s. To add abundance to abundance makes little sense.

IV. Economic Benefits of Space Activities

Given these serious constraints – and real costs – to Space enterprise, there are nevertheless also important, very basic benefits to such enterprise which amply justify our Space activities. Among the basic benefits I would list:

1) *The Survival of Man.* As mentioned earlier, the images of Earth from Space, and of the inner and outer solar system, have shown that the solar system is an extremely violent place. Sitting on this "soap bubble" Earth, mankind has a duty to get off Earth and learn how to live and sustain itself outside this Earth. I call this the true "Project Independence", or project survival. Mankind has to pursue manned Space flight. It is the historical, existentialist duty of our generation, and of those to come. This exploration will take place with or without the United States. If we do not pursue manned Space exploration the Russians will, and the Japanese, and the Chinese, and of course the Europeans. We have no choice, even if we wanted to. But the United States will go out there again, and the reason for that is survival, ours and mankind's.

Related to survival and the need to go into Space is another factor: today, for the first time the world is "closed", i.e. the known Earth is a closed world for the first time in history. Columbus set out for the unknown; others set out for the unknown, some as recently as the early part of this century. Even in the 1950s the atlases of the world contained "white spots" of unknown, unexplored territories. These spots have disappeared today, there are no "white spots" of unknown territories left on Earth today. I believe it is impossible for mankind to live in such a closed world for long – a zero sum world. We have to have open frontiers: the challenge of the unknown means that we have to go into Space. These are not abstract notions; these are real, they are the primary reasons for going into Space. The Space Station may not make much economic sense , but manned Space exploration is reason enough for this pursuit.

2) *The High Ground of National Security.* For the past 25 years Space already has made significant contributions to the stability of strategic relations (see above). More importantly, we now do have the President's Strategic Defense Initiative (SDI),

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which holds the promise to liberate the United States and mankind from the unhealthy current situation of mutually assured destruction (MAD). MAD is a new, unhealthy condition of mankind. The moral equivalence it implies – in Europe and elsewhere – between the Soviet Union and the United States is obnoxious, to say the least. We have to get away from this confrontation, this nightmare, the currently very unstable "stability". SDI holds that promise. This indeed is a benefit of Space, and let us call SDI that.

Now, beyond these basic benefits, possibly transcendental benefits to some, let me come to the more immediate, pecuniary, economic paybacks we may expect from Space in the decades to come. Given the above real constraints – leaving the issues of principles aside, these are transportation costs and the cost of time – there will be two major benefit areas from Space activities: information and energy. Both commodities can be transmitted at low added cost and essentially at the speed of light. Both commodities meet the principle cost obstacles to the uses of Space just listed.

3) *The Information Economy*. The payback from Space in the next decades will not be from Space processing or from natural resource uses of Space on Earth as envisioned by some. The high cost of transport of these massive commodities alone will prevent such large scale uses. The one immediate area that has and will 'pay back' in multiples is Space-based information – communications, remote sensing, worldwide data bases and information management. Today's economies are information economies. In the United States, of the $4 trillion or so of GNP, about $2 trillion can be related to informational activities: the garnering of information, the creation of information, the storage and distribution of information, passing on information from one generation to the next. Furthermore, and often overlooked, is the information content of products: an airplane today – in terms of manpower and materials expended on its design and construction – is mostly "information": CAD/CAM, avionics systems, fly by wire technologies, air traffic control systems, scheduling and operations of the aircraft etc. This is true for many other products as well.

Communications satellites of today are just the beginning. Let me give you a vision: we have today the capability to commit the U.S. to putting all the information contained in the Library of Congress "into orbit" making this information

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accessible to all mankind worldwide through small, portable terminals, without any intervening controls or groundbased network 'interfaces'. This would require two or three large platforms in geo-synchronous orbit. The Library of Congress comprises about 80 trillion bits of data in all the books and documents stored there.

Such "Information Platforms" will be the end of the control of information, the control of societies, where governments often deny access to information to their own people. Such "Information Platforms" are in my mind among the most revolutionary, new frontiers that still remain to be conquered. Such "Information Platforms would also go a long way to assure the "survival" of man's knowledge, should indeed a major nuclear war ever destroy the main repositories of man's knowledge today, which are few indeed.

Instead of pursuing such ideas and technologies, we have cut back – indeed eliminated – any NASA communications R&D.

4) *Energy*. The other major payback from Space – not in the next decade, but certainly in the next century – will be the collection of solar energy in Space and its transmission to Earth to provide for mankind's energy needs. The reason for this, once more, is that energy once garnered can be transmitted at low additional cost and essentially at the speed of light, the two necessary attributes for any large scale economic uses of Space. And again we have managed to terminate all R&D into this potential in the United States: I was a member of the National Research Council committee that concluded that the U.S. should not even do research on the Solar Power Satellite (SPS). Tom Paine and I dissented, but that did not change the conclusion of that illustrious committee.

Let me just briefly sketch out for you this potential. The "disk" described by the Earth in Space has incident solar energy at one AU and over ten days equivalent to the total known and speculated about fossil fuel resources accumulated on Earth over millions and millions of years. Again, all this energy is equivalent to but ten days of solar energy that passes through a circle with about 5,000 miles in diameter.

If one were to put such a disk closer to the Sun, say at the distance of Mercury, that energy equivalent disk would "shrink" to 3,200 miles, roughly the distance from Bar Harbor, Maine, to San Diego, California, with a total area equivalent to

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that of the U.S.S.R. In one day more energy passes through that disk than the energy needed by all mankind to put it on the same per capita energy availability as that enjoyed by Europe.

Instead today we have an insurmountable contradiction: we say that we want all mankind (i.e. 5 billion people) to have "our" standard of living. At the average European energy consumption, i.e. much less than in the United States, that would mean 40 billion tons of coal equivalent energy consumption per year. Nobody can do that on Earth, even if the fossil resources were available, which of course they are not. And even if they were available, the environment would not allow such use.

V. Space and the Developing Countries

Space holds a particularly important role for developing nations. It should be obvious by now that many "tenets" held by so-called development experts of the past few decades – geared towards the export of the industrial goods from industrial countries at great expense to the developing countries was a mistaken notion. Just as some of us always have maintained that the real promise for developing countries was a market oriented development approach – and that it was protectionism that was the bottleneck to rapid economic development – now applied in the reverse by many industrial nations to keep developing countries out of established industrial markets – so it is with Space and Space applications today: the foremost need and opportunity of developing countries lies in the full and rapid development of advanced, modern Space-based information technology systems. Rather than try to insulate oneself from the worldwide, rapid information revolution and information flow, developing countries have to insist on an open market access to these technologies and their uses. Countries that insulate themselves from this information flow do so only at great harm to themselves.

Some of us have advocated the establishment of Global Resources Information Systems more than a decade ago, for used by all nations, making use of the most advanced remote sensing and communications technologies. Nothing of the sort has happened, and often at the ill-informed insistence of international conference participants concerned about 'the benefits of mankind', rather than the dire needs of the developing nations.

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In addition to the vast information benefits, developing nations must expect the development of Space as a source of energy: all the promises and hopes held by four out of the five billion people living today in developing regions will come to naught if mankind does not find a practically inexhaustible, clean, safe and hopefully affordable energy source. Fusion energy may never be such a source, if only for the high degree of contamination. Nuclear fission energy could be an interim solution, but issues of non-proliferation seem to hinder world-wide reliance on nuclear energy supplies. This leaves Space-based, solar energy supplies even for use down here on Earth as the only realistic, longterm hope for an energy source. Vast strides are being made in the Space technology areas that bear directly on making the vision of Space-based power supplies a likely promise for the 21st century.

The alternative option would be the massive use of nuclear energy worldwide, a prospect disturbing to many.

VI. The Need for Free Market Principles in Space

These are the broad potentials for payback from Space that largely still lie ahead to be realized. But before we will see a large scale expansion in the economic uses of Space – which can only come about through private enterprise we have to revisit and change the ground rules that govern Space activities.

Today we have outlawed private property in Space with the 1967 Outer Space Treaty. How the United States – of all countries – did so is beyond me, only five years after setting an enlightened precedent with the creation of Comsat in 1962.

We now have also outlawed proprietary data rights to original Space data with the so-called Landsat Remote Sensing Commercialization Act, an Act in fundamental violation of the First Amendment of the U.S. Constitution, in that it requires a government license before one can operate a television camera in Space.

If we want to go into Space we cannot do so today without a host of government approvals, consents and other unwarranted and unnecessary requirements artificially imposed to assure government control of these activities. We have to re-establish in Space the same principles that govern our activities on Earth and which made the United States and other free market societies so dynamic and great. Private property rights to any and all mineral resources, private property rights to

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any and all lands, private property rights to any data gathered in Space and from Space, private property rights to all intellectual knowledge developed in the pursuit of Space enterprise, and last but not least, the principle of the free, worldwide flow of information, these have to be restored before one will see the full payback from Space for the United States and for mankind.

Unless we do so, if we simply dispense with free enterprise and the freedoms known to some on Earth as soon as we lift off from a launch pad to enter Space as a region governed by totalitarian principles so contradictory to the values we hold on Earth, I do not see economic or other reason for us to go into Space, whether privately funded or at taxpayer's expense. We have to change the ground rules and establish in Space the same principles that govern successful and democratic societies on Earth, all of which are based on private property, risk and gain. If that means abolishing the 1967 Outer Space Treaty, so be it. Why should we advocate and defend a treaty that is contrary to our fundamental constitutional principles?

The ultimate payback from Space are profits, and profits gained from Space enterprise will be the ultimate benefits for mankind. That is why it is important that we go back and re-establish the fundamental principles of free enterprise, so indeed all of us can and will benefit from Space, industrial as well as developing countries.

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EDUCATION IN JAPAN: A CONTRIBUTING FACTOR TO JAPANESE INDUSTRIAL SUCCESS?

by Richard Lynn

During the last two decades there has been increasing concern over the standards of educational achievement in American schools. Average scores obtained in the Scholastic Aptitude Test have been in steady decline since the '60s.(1) The National Assessment of Educational Progress has produced evidence of widespread illiteracy among young American adults and its 1986 survey has found that among 21-25 year olds, fewer than 40% could understand a simple newspaper article and only 20% could understand a bus timetable.(2) This evidence can only be profoundly disturbing for the economic and political well-being of the United States.

Similar problems have been present in Europe. In Britain, public disquiet over the large numbers of school leavers with inadequate standards of literacy and numeracy has been mounting. The government has set up commissions to inquire into the causes of these poor standards and to make recommendations, but they have proved as intractable as they have been in the United States.(3) In both countries there appear to be no easy solutions to these problems.

For a possible model of an efficient education system which achieves far higher standards than those in the United States and Europe it is useful to turn to Japan. Over the last 20 years there have been a number of international surveys of educational standards in different countries and these have invariably shown that Japanese school children are well ahead of those in the West. The first survey of this kind was of mathematics and was carried out in the mid-60s. It was found that Japanese 13 year olds were about two years ahead of their counterparts in the United States and Europe. Among 18 year olds the Japanese lead was even greater. Only approximately 2% of American 18 year olds achieved the same score as the average Japanese.

These results have been repeatedly confirmed in later investigations which have covered science as well as mathematics. A summary of the principal studies is given in Table 1. It would

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seem that among 6 year olds Japanese children are already ahead of their counterparts in the United States. The Japanese lead increases over the years of childhood and becomes very substantial among older adolescents.

In this paper we consider the factors responsible for these high Japanese educational standards. It is proposed that they are four in number and consist of the longer school year worked by Japanese children, the tight control of the curriculum exercised by government, the existence of a strong free enterprise system among Japanese senior high schools and in supplementary education, and the strong incentives for academic work which are present for Japanese school children.

Length of the School Year

The first factor that underlies the high educational standards of Japan is the length of the working school year. All Japanese schools are required by law to work a 240 day year. This compares with a working year of approximately 180-190 days in the United States, the precise length varying a little between different states. The working school year in Europe is about the same as that in the United States. There is some variation between countries, but nowhere is the working school year so long as in Japan.

There is little doubt that the amount of time put into school work makes a significant contribution to the amount children learn, subject perhaps to some degree of diminishing returns effect. The gains enjoyed by Japanese children from their extra schooling will accrue from year to year until by mid-adolescence they will have received some two or three years more education than their counterparts in the West. It seems certain that Japanese children must derive some advantage from the additional time available for the learning process.

It is curious that there has been so little discussion in the United States and Europe of the length of the school year. The working school year has been fixed by conventions going back centuries to the time when children were given long summer holidays so that they could assist in bringing in the harvest. This was the busy time of the year for largely agricultural communities when all hands were needed on the farms. It is surely time to question whether the retention of this time-hallowed working year is still appropriate for the overwhelmingly urban population of the late twentieth century. It is a testimony to

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the absence of creative thinking among the educational establishment in the United States and Europe that so little consideration has been given to this question.

Government Specification of the Curriculum

The Japanese Ministry of Education specifies in detail a core curriculum which schools are required to teach children at each grade. The specified curriculum covers the Japanese language and literature, mathematics and science. The curriculum for each subject is set out in books which are issued to schools. It is the responsibility of the school principals to insure that the specified curriculum is taught, and government inspectors visit schools to insure that this responsibility is properly discharged.

This system is in marked contrast to that prevailing in the United States and Britain, where the school curriculum is the responsibility of school principals, with some direction from local education officials. The effect of this is that there are considerable variations in the curriculum from one school to another. In practice there is a good deal of laxity in the control of teaching, and research has shown that the school principals who are nominally responsible have little detailed knowledge of what is actually being taught in classrooms. (5)

It is clear that the Japanese practice of specifying a core curriculum imposes a degree of discipline on teachers which is lacking in the United States and Britain. The Japanese system insures that all children have a solid grounding in the basic academic skills. The result is that Japan does not have the problem which is so widespread in the West of large numbers of adolescents leaving school unable to read or do simple calculations. There is no doubt that this is due in large part to the specifications of the core curriculum laid down by the Japanese Ministry of Education.

The possibility of government taking some steps to specify the school curriculum is another question which has received virtually no discussion in either the United States or Britain. To the Japanese this *laissez faire* tradition is surprising and many Japanese educationists are astonished when they learn that in the United States and Britain the government has no authority to specify what is taught in government-funded schools. The Japanese take the view that the government has a legitimate interest in insuring that the basic academic skills are

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properly taught in schools and has a right and even a duty to insure that these skills are taught efficiently.

The Private Sector in Japanese Education: The Senior High Schools

A number of social scientists have argued that American and British schools are run largely as state monopolies and are subject to the inefficiencies which typically characterize services supplied by monopolists. The first statement of this view to receive widespread attention was set out in 1962 by Milton Friedman in his *Capitalism and Freedom,* and over the last quarter century there has been considerable discussion of how a market system could be introduced into education as a means for revising efficiency.(6) Friedman proposed the voucher scheme. In this scheme the government issues parents with vouchers which are essentially checks which can only be spent at schools, and most social scientists have followed Friedman in advocating different variants of this scheme. This proposal has not however proved attractive to politicians, and although there have been one or two local experiments the practical problems of implementing the scheme have proved insurmountable. Hence with the exception of small private sectors amounting to approximately 12% of children in the United States and 6% in Britain, education has remained a state monopoly.

In Japan there is a much stronger private sector. There are two areas where private schools operating on free enterprise principles play a significant role. To understand these it is necessary to give a brief description of the Japanese educational system. Almost all Japanese children attend state primary schools from the age of 6 to 11 years. After this they proceed to state junior high schools which provide three year courses for the 12-15 age group. Up to this age only around 1-2 percent of Japanese children attend private schools. At the age of 15 Japanese adolescents are permitted to leave school, but in recent years only 6% have opted to do so. The remaining 94% continue their education voluntarily in senior high schools or technical colleges.

The senior high schools provide courses for 16-18 year olds. About a third of these schools nationally are private institutions and in the major cities the proportion rises to about half. These private schools operate on rather similar principles to the pri-

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vate American universities. Their legal status is that of private institutions and they charge fees, but they receive subsidies from government which cover about 40% of their costs. The remainder of the senior high schools are public state institutions. These also charge fees, although the fees are quite small, amounting to around 300-400 U.S. dollars per annum.

The charging of fees for all the senior high schools and the voluntary nature of education have the effect that these schools are operating in a market system. They have to sell their services and they compete with one another for their customers. If they fail to attract pupils they are forced into bankruptcy or, in the case of the public schools, closure. In spite of the subsidy element, they are subject to the discipline of the market in much the same way as any other commercial enterprise. It has been estimated by American sociologists that these schools turn out graduates at the age of 18 who are at about the same level academically as the average American college graduate aged 22.(7) These schools certainly achieve very high academic standards as compared with those in the West and there is little doubt that these high standards are attributable to some degree to the market discipline to which they are exposed.

Private Education: The Juku

In addition to the market system in which the Japanese senior high schools operate, there is a second significant sector of Japanese education which is also run on free enterprise principles. This is a system of private supplementary schools which many Japanese children attend in addition to their principal schools. These supplementary private schools are known as *juku*. These *juku* cater for children of all ages. There are *juku* for children of primary school age who are attempting to gain entry to one of the private academic junior high schools. Greater numbers of children enroll at later ages and large numbers of 12-14 year olds attend *juku* for additional coaching for the "fourteen plus" entrance examinations to the senior high schools. There are also many 15-18 year olds who attend *juku* for coaching for the university entrance examinations. These juku have evolved gradually over the course of decades. Initially, in the nineteen twenties and thirties, the juku were quite modest establishments and consisted typically of retired or moonlighting schoolteachers taking a few pupils for additional coaching in their own homes during the evenings and in school

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holidays. These early *juku* resembled somewhat similar small enterprises in Britain where coaching for the eleven plus examination used to be given to individuals or small groups of children. Such cottage industry *juku* still exist in Japan but alongside them there have also grown up large scale enterprises with purpose-built four or five story buildings and these are operated by national chains. They are highly professional businesses whose objective is to beat the examination system for high school and university entrance. Among them there are now elite *juku* which specialize in the entrance examinations for the elite high schools and the elite universities. These have their own entrance examinations and admit only able and promising pupils who are likely to do well and be a credit to the school. In some cases attendance at an elite *juku* carries almost as much status as attendance at an elite high school or university.

The great growth of these highly professional *juku* has been largely a post-war phenomenon and they now play an important role in Japanese education. The Japanese Ministry of Education carried out a survey of *juku* in 1976. This showed that over half of the 12-14 year olds were enrolled in *juku* in Tokyo, Osaka and other large cities, and over a third over Japan as a whole. The proportions of 9-11 year olds attending *juku* is somewhat less, namely about 20 per cent. More boys are enrolled in *juku* than girls, reflecting the greater importance attached by Japanese parents to the education of boys, but the percentages are not greatly disparate between the sexes.

Japanese adolescents spend an appreciable proportion of time at their *juku*. Typically they attend the *juku* two or three evenings a week and on Saturday afternoons. In the school holidays attendance at the *juku* becomes full time. Thus for large numbers of Japanese children the *juku* have assumed an importance almost as great as that of their ordinary schools.

The *juku* do not receive any form of government subsidy. They are purely commercial enterprises engaged in selling education to consumers like any other service sold by commercial businesses.

The *juku* constitute an interesting and, to many western observers, unexpected adaptation of the market to the needs of Japanese parents, who are able to secure a free education at the public schools topped up by an additional education purchased at *juku*. In their essentially supplementary role to publically funded or subsidized ordinary schools they bear some

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conceptual resemblance to pensions in the West, where a basic public service is provided for everyone, but which increasing numbers of citizens choose to supplement with additional private schemes which they purchase on the market.

It is a curious and interesting fact that hardly anything resembling these Japanese *juku* has emerged in the United States, Europe or other parts of the world. It may be that this is simply a failure of entrepreneurship and that there is a niche in the market which could be filled by enterprising educational entrepreneurs. Special private schools do exist which aim to assist failing students to raise their grades, but these usually operate in regular hours as an alternative to the regular schools. Also they aim to bring the lagging student up to a minimum desired level rather than to assist the brighter student to achieve even higher levels of educational efficiency. An alternative possibility is that Japanese children have stronger incentives to learn than those in the West and that these incentives have created a demand for additional education which is largely absent in the West. Certainly the incentives for Japanese school children to do academic work are significantly stronger that those for children in the West. It is to this question that we turn next.

Incentives for Academic Work

One of the most neglected issues in education in the West is the provision of incentives for school children to do academic work. It has been assumed that it is sufficient for government to specify the number of years children are required to remain in school. It is assumed that learning will take place during those years, but in practice many adolescents leave school having learned virtually nothing. There is no doubt that an important element in the poor levels of educational attainment of many adolescents lies in the absence of incentives to learn.

There is a contrast in this regard with the structuring of work for adults, where incentives for efficient work normally play a central role. For adults, efficient work is normally rewarded by promotion, bonus payments and so forth, and inefficient work is punished by financial penalties or dismissal. The operation of these rewards and punishments acts as an incentive which keeps people working efficiently.

The central role played by incentives in the motivation of work effort has been very poorly understood by educational

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theorists. No discussion of incentives are given in standard textbooks on education and educational psychology and sociology. Nor do the commissions established by Western governments to consider educational problems normally display any appreciation of the degree to which incentives are lacking in schools.

In contrast with educational theorists, many practising teachers do have an intuitive understanding of the importance of incentives for the work efforts of children. Teachers normally award high marks or grades as symbolic rewards for good work and low marks or grades as symbolic punishments for work of poor quality. Nevertheless, these symbolic rewards and punishments are not particularly salient for children. They are not backed up by anything tangible, and for those who opt out psychologically from schooling their effects in motivating academic work are negligible.

The education system in Japan provides school children with incentives for academic work which are far more powerful than those in the West. Those incentives are present at two stages in the school child's educational career. The first occurs at the age of fourteen, when Japanese children take entrance examinations to the senior high schools. These senior high schools are ranked in hierarchy of public esteem in each locality, such that one or two schools are generally considered to be the best in the area, others are regarded as good but not of the first class, while yet others are considered to be average or poor.

Being at the prestigious senior high school confers both status and the benefits of good teaching, and so places in the prestigious senior high schools are keenly competed for. Entry to these schools is by competitive examinations and these act as powerful incentives from 12-14 year olds to do the academic work necessary to secure entry to the good schools. The incentive of doing well in the "fourteen plus" examinations is undoubtedly a major factor in the high academic standards achieved by young Japanese adolescents in the 12-14 year age range.

Once Japanese adolescents are placed in their senior high schools they are confronted with a fresh set of incentives in the form of entrance examinations to universities and colleges. These are also ranked hierarchically in public reputation. The most prestigious is the University of Tokyo, which has a standing in Japan analogous to Harvard or Yale in the United States, Oxford and Cambridge in Britain and the Ecole Polytechnique

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in France. Only slightly less prestigious than Tokyo is the University of Kyoto, and after this a dozen or so other universities in the major provincial cities such as the universities of Nagoya, Osaka, Kobe and Yokohama. Numbered also among this elite group is Hitosubashi Technical University, which resembles the Massachusetts Institute of Technology in technological excellence and public standing. Below this top dozen universities stand some forty or so provincial universities which enjoy good reputations. Finally, there are several hundred small universities and colleges which are little known except in their local communities.

This hierarchical structure of universities in Japan appears quite similar to that in the United States, where there is also a handful of highly regarded universities and many others of lesser standing. A similar prestige hierarchy also exists in England. But the university prestige hierarchy presents a more powerful incentive for academic work for teenagers in Japan and England than it does in the United States. There are two principal reasons for this.

In the first place, the elite universities in Japan and England are highly meritocratic in so far as their admissions are based solely on talent and there are no financial impediments to entry. On the other hand, in the United States the more prestigious universities are for the most part private institutions charging high fees, the effect of which is to debar many highly talented young Americans from entry. The meritocratic nature of the elite universities in Japan and England has the effect that many of the talented teenagers do in fact secure entry to these institutions. It is for this reason that so many of the top positions in society in Japan and in England are occupied by graduates from the elite universities. This is the case to a far greater extent than in the United States. For instance, during the four decades since the end of World War II most of the prime ministers in Japan have been graduates of the universities of Tokyo and Kyoto, and virtually all the British prime ministers have been graduates of Oxford or Cambridge. These facts are widely known by the public, who have accordingly come to believe that an important steppingstone for success in Japan or England is to secure entry to one of the elite universities. The situation is very different in the United States, where no-one imagines that to become President it is more or less obligatory

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to have been to Harvard or Yale. The effect of the Japanese and English systems is that securing entry to one of the prestigious universities is more important for ambitious and talented teenagers than it is in the United States, and correspondingly exerts greater incentive effect to do the academic work required to get into one of these elite institutions.

There is a second factor which makes the university admission procedures in the United States relatively ineffective as incentives for academic work for seventeen and eighteen year olds. In Japan and England admission to universities is secured on the basis of good performance in examinations which test knowledge of a defined academic curriculum in mathematics, physics, foreign languages, history and so forth. To do well in the examinations it is necessary to expend the work effort required to master the curriculum. This constitutes the incentive and large numbers of Japanese and English teenagers respond to it appropriately by doing the necessary work.

In the United States, admission to universities is secured largely through performance in the Scholastic Aptitude Test. This test is designed to measure aptitude rather than achievement, and detailed mastery of an academic curriculum is not necessary to do well in the test. The SAT was, of course, specifically designed to assess aptitude and intellectual potential because of the possible handicaps which tests of academic knowledge might place on teenagers from less privileged homes. But the effect is to reduce to vanishing point the incentive to master an academic curriculum which is present for teenagers in Japan and England.

There is an additional factor in Japan which increased still further the incentive to secure admission to one of the more prestigious universities.This is the practice of the leading Japanese corporations and civil service of providing life long employment. There is no developed labor market for executives in mid-career in Japan, whereby professionals switch from one corporation to another, or into the public service and then back into the private sector, as there is in the United States and Europe. The major Japanese corporations and civil service recruit their management trainees virtually entirely from the top dozen or so universities. Once graduates from these have been taken on they normally remain in the same corporation throughout their working lives. The smaller Japanese corporations operate the same system but widen their recruitment net to cover the

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next forty or so universities in the prestige hierarchy.

The effect of this practice is that obtaining entry to a prestigious university is a vital step for a successful career in Japan. The university attended determines the course of the individual's career far more than in the United States or Europe. For this reason the entrance examinations to the prestigious universities exert very powerful incentive effects on Japanese adolescents to do the academic work required to secure entry to these universities. Approximately 38% of Japanese teenagers enter higher education so that the incentive effects of the entrance examinations act on a substantial proportion of the age group.

Does Increased Expenditure Mean Improved Education?

Outputs should always be considered in relation to costs and it is important to consider what expenditure is entailed in securing the high educational standards in Japan. The first thing that strikes the Western observer about Japanese schools is the large size of the classes, which typically consist of around 50 children as compared with 25 to 30 in the United States and Europe. Since salaries for teachers are the largest item in educational expenditure, the large size of classes suggests that relatively small sums are devoted to education in Japan.

This conclusion is in general correct. The large size of typical Japanese classes, which is so striking to the visitor from the United States or Europe, is however a little misleading because Japanese teachers work fewer hours per day than is usual in the West. It may well be more cost effective for teachers to teach fewer hours but larger classes, as in Japan, rather than to spend a greater number of hours teaching smaller classes, as in the United States or Europe.

The first useful data to give international comparisons on expenditure on education appeared in the mid-1960s in the first study of international achievement in mathematics.(10) This gave the expenditure per 13 year old pupil in U.S. dollars as 214 in the United States, 208 in England and 53 in Japan. Expenditure per pupil in Japan was therefore about a quarter of that in the United States and Britain at this period. More recent figures for public expenditure on education as a percentage of gross national product have been calculated by the United Nations secretariat for the year 1980. These are shown in Table 2. It will be seen that Japan appears as one of the relatively low spenders among the economically advanced

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nations. However we look at the data the conclusion to be drawn is that expenditure on education is relatively low in Japan.

This is an important negative conclusion when viewed in the light of the strong pressures for increased public expenditure which the education lobby has exerted on governments in the West during the post-World War II decades. The lobby has had considerable success and public expenditures on education have increased substantially in all the economically advanced Western nations. It is doubtful whether educational standards have responded positively to these increased expenditures and in the United States there is clear evidence that standards have fallen. The Japanese evidence shows that heavy financial expenditure is not a necessary condition for securing high educational standards.

Conclusions

While there has been considerable public concern over the state of education in both the United States and Europe over the last two decades, the quality of analysis of the factors responsible for the prevailing poor educational standards has been weak. In the United States the Presidential Commission's report *Action for Excellence* (8) lacks any serious analysis of the problems and consists of little more than pious exhortations such as "Business leaders, labor leaders, and members of the professions should become more active in education". Similar government commissions in Britain have also issued lists of equally vacuous recommendations. (9)

Educational standards in Japan are far higher than those in the West. An analysis of the way these standards are achieved suggests that four principal factors are responsible. These are the significantly longer working school year, the tight control of the curriculum by the Ministry of Education, the existence of a substantial free enterprise sector subject to the discipline of the market, and the presence of powerful incentives for academic work for Japanese school children. In all these respects education in the West is weak. These are the areas that need strengthening if educational standards in the West are to be raised to the level of those prevailing in Japan.

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FOOTNOTES

(1) B. Lerner (1983) Test scores as measures of human capital and forecasting tools. In R.B. Cattell (ed). *Intelligence and National Achievement*. Washington, D.C. Institute for the Study of Man.

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The MANKIND QUARTERLY MONOGRAPH SERIES

Number Two

ECOLOGY AND EVOLUTION

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POLITICAL PARTIES, DEFICITS, AND THE RATE OF INFLATION: A COMPARATIVE STUDY*

By Sohrab Abizadeh and Mahmood Yousefi

Political analysts and economists have long been interested in the expenditure and budgetary process of different countries. The notion that government deficit spending is a primary cause of inflation in different economies has been under critical investigation for some time, particularly during the last two decades. Deficit spending has received so much attention recently that the Full Employment and Balanced Growth Act of 1978 in the United States specifically set a balanced federal budget as one of its objectives.

Economists, however, have not been able to reach a consensus on the possible relationship between the rate of inflation and the size of the government deficit. Dwyer (1982), for example, tested the three leading explanations for the positive link between the level of prices and government deficits. He found no significant evidence to support the idea that inflation is caused by deficit spending. Crozier (1976) also concluded that there was no causal relationship between deficits and the rise of inflation during the '70s in Canada. On the other side of the spectrum, critics of large deficits argue that deficit spending, in addition to being an ineffective means of stabilization policy, can cause an inflationary pressure in the economy.(1)

It is clear that non-attempts to link inflation to deficits have been unable to put forth a convincing framework of causal relationship. Giffen et al. (1981-82, pp. 66-67) conclude that "The data . . . offer little support for either the traditional Keynesian or current monetarist views on the cause of inflation." The authors go on to suggest that the investigators might alternatively use some post-Keynesian approach (administered pricing or cost-push analysis) to determine the cause of inflation.

Conklin and Courchene (1983, p. 41) assert that, "since the alleged link between deficit and inflation is not a theoretical

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necessity, but rather an alleged probability, empirical evidence of such relationship would seem to be required." Even if one agrees with the foregoing assertion, an agreement on causality issue would be difficult. Modigliani (1983) makes a few basic and interesting assertions in this regard. He claims that current deficits are not a major cause of inflation; on the contrary, inflation is a major cause of deficits. "The causation goes from stagflation to deficit, not the other way around" (p. 55). He further argues that deficits ". . . may not be bad in the short run, . . . but if they continue in the long run, they have serious consequences" (p. 55).

Economists, ranging from ultra-conservative to liberal, accept government as a fact of life. It is its size (and its role) which is the subject of controversy. Wagner's Law, although challenged, provides a clear explanation as to how a rising share of the Gross National Product, under government control.(2) But although economists of all ideological backgrounds have accepted the existence of government, there are many who oppose its growth and spread. As Reuber (1980) put it "In part this anti-government sentiment reflects disillusionment with the ability of government to cope effectively with some of the problems it has addressed: The failure to deal with inflation and unemployment is perhaps the most obvious example today, . . ." (p. 33). One way to resolve the controversy regarding the detrimental effects of a large government is to test for the possibility of a causal link between the growth of government and inflation. This should be done in light of the fact that governments can grow without necessarily generating deficits.

II

Upon close examination, it appears that the role and impact of deficits has been over-emphasized.(3) One may argue that this overemphasis has been misplaced since "deficit illusion" has turned our attention away from the real cause of concern: that of the size of government. Therefore, the important questions should be: 1) how can deficits be reduced?, and b) how could government expenditures and taxes become smaller? In particular, we are interested in finding out whether the size of the government, or more specifically the relative size of the government, causes inflation. Given that the size of the deficit is a direct function of the size of government we consider deficits

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as an effect rather than a cause in our models.(4) The interesting question then becomes: what determines government size?

Generally speaking, it has been hypothesized that the more conservative the party in power the less it would allow the size of government to grow and vice versa. In addition, the more conservative the leader of the party in power (within the party's own ideological spectrum) the higher will be the probability that he or she will exercise of fiscal restraint. The platform of political parties purportedly reflects the party's intention with regard to the size of government. For example, during the 1980 presidential election in the United States, the Democrats proclaimed their strong opposition to a balanced budget whereas the "Republicans, as conservatives, were more receptive to the constitutional amendment"(5) (Swartz et al., 1982, p. 207).

Once in office, however, both liberal and conservative politicians seek relection.(6) Their efforts for reelection will intensify the closer they get to the end of their term in office. One way of promoting their popularity is through the exigencies of providing (and promising) higher material gains for the public. In pursuit of the latter goal, an effective way of providing short run stimulus to the economy is through increased government expenditures. Hence, it would be interesting to measure the impact of political parties in power and the position taken by their leaders on the size of government. There are a host of economic variables that are usually used to explain the trend in government expenditure and its relative importance to GNP.(7) Based on the foregoing, there are two major issues involved in the empirical analysis of the size of government: inflation and the political party in power. Although it is empirically possible to establish a direct link between the rate of inflation and the size of deficit, we believe that this kind of exercise reflects "deficit illusion." The deficit in itself is not a meaningful measure of government activity, since it may or may not entail direct government involvement in the economy. On the other hand, an evaluation of the link between inflation and the size of government would be more meaningful when one is interested in the cause of inflation. The size of government, in addition to many other economic variables, depends on the political persuasion of the party in power, as well as the position taken by its leader within that party. An empirical examination of these relationships is the other objective of this paper.

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CHART A

In order to test the first hypothesis, the following alternative models are developed:

$$D_t = \tau + \phi_1\left(\frac{G}{GNP}\right)_t - \phi_2(ER)_t + \upsilon \qquad (1.a)$$

and

$$D_t = \tau^* + \phi_1^*(GR)_t - \phi_2^*(ER)_t + \upsilon^* \qquad (1.b)$$

and

$$D_t = \tau^{**} + \phi_1^{**}\left(\frac{GR}{GNPR}\right)_t - \phi_2^{**}(ER)_t + \upsilon^{**} \qquad (1.c)$$

and

$$D_t = \tau^{**} + \phi_1^{***}(G)_t - \phi_2^{***}(ER)_t + \upsilon^{***} \qquad (1.d)$$

where,

D = Total Deficits of the central government, G = Total Central Government Expenditures,

GNP = Gross National Product,

ER = Employment ratio (defined as the observed total employment divided by total civilian labor force),[8]

GR = Real total central government expenditures,

GNPR = Real Gross National Product.

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CHART B

$$GR_t = \alpha + \beta_1 T + \beta_2 (PP)_t + \varepsilon \qquad (2)$$

where

T = time,

pp = Dummy variable for political party in power, to assume a value of one and zero when respectively liberals and conservatives are in power,

and GR has already been defined.[9,10]

CHART C

$$GR_t = \gamma + \delta_1 T + \delta_2 (RVL)_t + \mu \qquad (3.a)$$

and

$$GR_t = \gamma^* + \delta_1 T + \delta_2^* (RVL)_{t-1} + \mu^* \qquad (3.b)$$

and

$$GR_t = \gamma^{**} + \delta_1^{**} T + \delta_2^{**} (RVL)_{t-2} + \mu^{**} \qquad (3.c)$$

where

RVL = A ranked variable representing the position taken by the leader of the party in power within the party's political spectrum,[11] and GR and T have already been defined.

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CHART D

$$\dot{P}_t = \chi + \phi_1 \left(\frac{G}{GNP}\right)_{t-1} + \phi_2 (ER)_t + \phi_3 (M1)_t \qquad (4.a)$$

and

$$\dot{P}_t = \iota + \omega_1 (G)_{t-1} + \omega_2 (ER)_t + \omega_3 (M1) \qquad (4.b)$$

where,

$\dot{P}$ = rate of inflation,

M1 = money supply,[13]

and G, GNP, and ER are as defined above.

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CHART E

In order to generate a ranked variable for the position taken by the leader of the political party in power the following steps were taken:

1. Three positions within each party's political spectrum were identified; right, center, and left.
2. A group of political scientists were interviewed. Each was asked to rank the leader of the political party in power in accordance to the three categories identified above.
3. An integer was assigned to each interviewee's response on the basis of the following table:

	Party					
	Conservative			Liberal		
	Position taken by the Leader			Position taken by the Leader		
	Right	Center	Left	Right	Center	Left
Points assigned	(1)	(2)	(3)	(4)	(5)	(6)

4. Using the values obtained in 3, an average of the points for each leader was calculated and used as a proxy for the position taken by each leader within the party's political spectrum.

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CHART F

Table A.1 Table of variables and the data used

	Variable	Definition	Source of Data
1.	GNP	Measured at constant prices (1980) in domestic currency units	IMF International Financial Statistics Yearbook, 1983
2.	GDP	Measured at constant prices (1980) in domestic currency units	as above
3.	Receipts	Calculated on a cash-flow basis and measured in domestic currency units	as above
4.	Expenditure	Calculated on a cash flow basis and measured in domestic currency units	as above
5.	Deficit(-)/ Surplus	*Expenditure + Lending (minus repayment) = Receipts + Deficit	as above
6.	Money Supply	M1	as above
7.	GNP Deflator	--	as above
8.	Consumer Prices (C.P.I.)	Consumer Price Data compiled from National Indexes taken to comparison base year = 1980	as above
9.	Government Transfers	I. Sweden: Direct transfers of Income to households, private organisations, and others measured in domestic currency units.	UN Statistical Yearbook, Issues 1958-1978
		II. United Kingdom: Current direct transfers of Income to households and others, includes payments to private non-profit making institutions and covers benefits provided from National Insurance Fund. Measured in domestic currency units.	as above

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CHART F
(continued)

	III.	United States: includes Inc me transfer payments ("to persons") Domestic and Foreign plus subsidies less current surplus of government enterprises measured in U.S. $-	The Budget of U.S. Government (Annual), Issues 1960-1982
	IV.	Canada: includes direct income transfers to household, production and consumption subsidies to business plus capital assistance to business for the purposes of expansion or modernization measured in domestic currency units.	Statistics Canada: Federal Government Finance, Issues 1959-82
10. Civilian Labor Force and Labor Force Employed	I.	Sweden and U.K.:	OECD Labor Force Statistics 1970-1981 and OECD Department of Economics and Statistics, Paris 1983, and OECD Basic Statistics, Paris 1972.
	II.	United States:	US Bureau of the Census, Statistical Abstract of the United States, Washington, D.C., 1984 (104th edition) and US Bureau of the Census, Historical Statistics of the United States Combined Issues to 1970, Bicentennial edition, Washington, D.C., 1975.
	III.	Canada:	Statistics Canada, Catalogue 71-519 and Statistic Canada, Historical Statistics of Canada, second edition, F.H. Leacy (ed.) 1983.

Note: All government financial data refers to Central Government activities of the respective countries under consideration.

* Lending-repayments includes purchases of equities and is net of repayments of lending and sales previously purchased.

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TABLE ONE

Summary of Regression Analysis for Deficit and the Size of Government

Country	Constant	$(GR/GNPR)_t$	$(GK)_t$	$(G/GNP)_t$	$(G)_t$	$(ER)_t$	R^2	F-value
Canada	-72.84	--	--	--	.157** (.019)	-77.89** (27.09)	.91	138.4
	-111.5	--	--	78.87** (22.4)	--	-130.5** (42.3)	.79	51.6
	-1.3	--	.12** (.024)	--	--	-1.44** (.27)	.89	105.16
	-1.2	.72** (.18)	--	--	--	-1.4** (.33)	.86	81.2
Sweden	61.75	--	--	--	.19** (.019)	56.48 (347)	.84	60.62
	238.8	--	--	156.5** (28.06)	--	205.6 (560)	.64	19.8
	.57	--	.203** (.039)	--	--	.42 (5.75)	.62	17.9
	1.48	1.52** (.29)	--	--	--	1.16 (5.86)	.61	17.6
U.K.	10363	--	--	--	.21** (.03)	110528** (35965)	.92	153.9
	43185	--	--	53.78** (16.03)	--	-59026x (36328)	.81	54.3
	432.6	--	.24** (.059)	--	--	348 (585)	.66	24.1
	1276.9	1.31** (.25)	--	--	--	934.9** (584)	.72	32.3
U.S.	-753	--	--	--	.100** (.015)	-800.2** (184.9)	.88	100.9
	-700	--	--	966.6** (161.6)	--	-923.8** (188.4)	.86	86.3
	-9.9	--	.11** (.02)	--	--	-10.62** (2.2)	.81	56.9
	-6.6	10.3** (1.7)	--	--	--	-8.87** (1.97)	.86	81.6

** significant at the 99 per cent level of confidence
x significant at the 95 per cent level of confidence

Note: Figures in parentheses are the standard error of the regression coefficients.

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TABLE TWO

Summary of Regression Analysis for the Size of Government (GR) and the Political Party in Power

Country	Constant	T	PP_t	$(RVL)_t$	$(RVL)_{t-1}$	$(RVL)_{t-2}$	R^2	F-value
Canada	-42.18	.022** (.001)	.011 (.023)	—	—	—	.93	188.5
"	-42.55	.022** (.001)	—	.0002 (.007)	—	—	.93	186.8
"	-43.9	.022** (.001)	—	—	-.0075 (.0075)	—	.93	194.2
"	-44.1	.022** (.001)	—	—	—	-.013x (.007)	.93	188.4
Sweden	-114.9	.06** (.004)	-.24 (.90)	—	—	—	.94	221.6
"	-106.1	.055** (.003)	—	-.101** (.017)	—	—	.96	406.0
"	-103.9	.054** (.003)	—	—	-.096** (.018)	—	.96	369.8
"	-117.4	.060** (.004)	—	—	—	-.046* (.022)	.94	197.9
U.K.	-43075	22.98** (.93)	4.25 (16.8)	—	—	—	.95	304.7
"	43205	22.97** (.91)	—	-2.97 (4.65)	—	—	.96	308.8
"	43133	22.22** (.879)	—	—	-5.195** (4.46)	—	.96	319.9
"	42632	21.968** (.919)	—	—	—	-6.45o (4.54)	.96	285.8
U.S.	-301.5	.155** (.006)	-.24** (.09)	—	—	—	.96	316.2
"	-286.5	.148** (.005)	—	-.09** (.03)	—	—	.96	380.0
"	-279.6	.144** (.005)	—	—	-.116** (.026)	—	.97	491.3
"	-271.1	.14** (.005)	—	—	—	-.115** (.026)	.97	440.4

** - significant at the 99 per cent level of confidence
* - significant at the 97.5 per cent level of confidence
x - significant at the 95 per cent level of confidence
o - significant at the 90 per cent level of confidence
NOTE: Figures in parentheses are the standard error of the regression coefficients

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Table 3.a. Summary of Regression Analysis for the Rate of Inflation and the Relative Size of Government

Country	Constant	$(G/GNP)_{t-1}$	$(ER)_t$	$(M1)_t$	R^2	F-Value
Canada	-40.8	47.27* (24.1)	35.38^x (24.8)	.21** (.075)	.88	57.96
Sweden	-113.7	20.13^o (16.56)	113.9 (114.4)	.078^o (.06)	.72	17.46
U.K.	-96.8	.154** (.029)	58.1 (94.9)	-.12 (.26)	.79	28.9
U.S.	-35.0	122.2** (28.1)	12.1 (22.4)	.015** (.005)	.89	63.7

** significant at the 99 per cent level of confidence
* significant at the 97.5 per cent level of confidence
x significant at the 95 per cent level of confidence
o significant at the 90 per cent level of confidence

Note: Figures in parentheses are the standard error of the regression coefficients.

Table 3.b. Summary of Regression Analysis for the Rate of Inflation and the Absolute Size of Government

Country	Constant	$(G)_{t-1}$	$(ER)_t$	$(M1)_t$	R^2	F-Value
Canada	-26.86	.046^o (.039)	28.11^o (25.8)	.25** (.09)	.87	51.7
Sweden	-94.6	-.024 (.06)	97.1 (118)	.24^o (.21)	.71	16.02
U.K.	-87.5	.0005* (.00002)	96.11 (132)	-.99 (.97)	.59	11.14
U.S.	-24.6	.014^o (.012)	25.3 (30.3)	.007 (.026)	.81	32.9

** significant at the 99 per cent level of confidence
* significant at the 97.5 per cent level of confidence
o significant at the 90 per cent level of confidence

Note: Figures in parentheses are the standard error of the regression coefficients.

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CHART ONE

In order to generate a ranked variable for the position taken by the leader of the political party in power the following steps were taken:

1. Three positions within each party's political spectrum were identified; right, center, and left.
2. A group of political scientists were interviewed. Each was asked to rank the leader of the political party in power in accordance to the three categories identified above.
3. An integer was assigned to each interviewee's response on the basis of the following table:

	Party					
	Conservative			Liberal		
	Position taken by the Leader			Position taken by the Leader		
	Right	Center	Left	Right	Center	Left
Points assigned	(1)	(2)	(3)	(4)	(5)	(6)

4. Using the values obtained in 3, an average of the points for each leader was calculated and used as a proxy for the position taken by each leader within the party's political spectrum.

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III

To empirically test the foregoing relationships, three hypotheses are put forth. The first hypothesis is that, *ceteris paribus,* there exists a positive relationship between the size of government and the level of the deficit. The second hypothesis states that the size of government is largely a function of the type of political party (and/or the position taken by its leader) in power. The third hypothesis states that, the rate of inflation is directly related to and depends on the size and type of government expenditures.

In order to test the first hypothesis, the alternative models are developed in Chart A. Note that the coefficients differ from one another depending on the type of definition used for the size of government.

Based on our second hypothesis and the foregoing discussions, the model in Chart B is developed to properly examine the nature of the stated relationships between the political party in power and the size of government.

Additionally, the relationships (Chart C) are hypothesized in finding a link between the size of government and the position of the party's leader in power (within the party's political and ideological spectrum).

In order to test these models, appropriate data for four sample countries (Canada, Sweden, United Kingdom and the United States) were collected. *Time Series* data were obtained for 1952-1983.(12) The results of the estimated models (equations 1.a - 1.d), using ordinary least squares (OLS) regression methods, are reported in Table 1. The OLS method was also used to estimate the parameters of equation 1, 2 and 3. The regression results are reported in Table 2.

Finally, the alternative models (Chart D) are developed to examine the effect of the size of government on the rate of inflation.

Using the data for our sample countries, the results of the estimated models are reported in Tables 3.a and 3.b Tables 3.a and 3.b are essentially the same. The major difference is that Table 3.a includes the relative size of the government ($\frac{G}{GNP}$) as one of the independent variables whereas Table 3.b uses the absolute size of the government (G) as one of the explanatory variables.

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IV

When the relationship between the size of the deficit and the size of government is examined, the hypothesis of direct link between the size of the deficit and the size of government is maintained for all our four sample countries. This conclusion is not contrary to our claim that the size of government, not the size of the deficit, should be used as an indicator of the degree of government's involvement in the economy. Obviously, the reasons for the growth of deficits are quite different from those of government expenditures in general. For instance, the deficits may increase if the government decides to service its debt.(14) Clearly, this would not enhance the degree of government's involvement in the economy. The deficit may also increase if the government decides to make more transfers and subsidies.(15)

The regression results obtained from analyzing the data for our four sample countries suggest a significant relationship between the size of government (GR) and the ranked variable for the leader of the political party in power (RVL). What is interesting is that, invariably, whether variables are lagged or not, an inverse relationship between these variables holds. This is contrary to the common and implicitly stated belief that the more conservative the party and more to the right its leader in power, the smaller the size of the government. Our results indicate that the more right of center the leader of the party in power, the larger is the size of government in reality. This relationship strongly holds for all the models reported for Sweden, the United States, and the United Kingdom, with one exception. As for Canada, the ranked variable is significant only when it is lagged for two years. Lagged RVL is significant in all other models as well. It can be concluded that the quest for reelection leads to providing (and promising) higher material gains to the public by increasing the government expenditures. These increases in expenditures are initiated at least one year before the election to ensure that the effect is felt in time by the public. Time variable carries a positive and at the same time highly significant sign for *all* models. This demonstrates that the size of government has been increasing over time.

The regression results obtained from the analyses of our data using the political party dummy variable $(PP)_t$ as an independent variable, are less conclusive. The study of the results for

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the United States reveal that the coefficient for $(PP)_t$ carry a negative sign and at the same time is highly significant. The coefficient for Canada, Sweden and the United Kingdom vary in sign, and none are significant. It follows that the type of political party in power had no significant effect on the size of the government in three out of four countries studied.

Based on the overall analysis of the models which relate the size of government to the ranked variable for the leader of the party in power it is safe to conclude that this variable has had a significant effect on the determination of the former variable (the size of government) during the period under study.

An examination of the nature of the relationship between the size of government and the rate of inflation reveals that this relationship is positive and significant for all countries when the relative size of the government is used as the explanatory variable. When the absolute size of the government is employed as the independent variable, the direct link between the rate of inflation and government size is maintained in all cases except in that of Sweden.(16) Indeed, the coefficient for G_{t-1} carries a negative sign, although not statistically significant. This does not invalidate the conclusions made here. That is, the size of government (both relative and absolute) had a significant impact on the rate of inflation over time in our sample countries.

In summary, the role of deficit as a measure of government involvement in the economy has been over-emphasized and exaggerated. This has resulted in what we call "deficit illusion." Based on our empirical results we offer several conclusions. First, although the positive link between the deficits and the size of government is a very significant one, the deficits should not be used as an indicator of the degree of the government's involvement in the economy. Second, the position of the leader within the party's political spectrum has a significant effect on the size of government. Finally, the size of government has significantly affected the rate of inflation in the past 30 years or so in the countries studied in this paper.

FOOTNOTES

(1) See, for example, Buchanan and Wagner (1977).
(2) See, Wagner and Weber (1977).

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(3) Statements such as "A deficit financed by increases in high-powered money leads to inflation . . ." (Boyes, 1984, p. 381), or "projections of these large deficits were affecting expectations of inflation . . ." (Boyes 1984, p. 438) are not uncommon in the macroeconomic literature.

(4) See table 2 on the regression results relating the size of deficit to the size of government for the sample countries.

(5) Once again, suffering from "deficit illusion," they probably meant smaller government.

(6) The terms "liberals" and "conservatives" are used in their broadest sense and do not reflect any value judgment on our part. Given that our sample countries have had only two major parties in power, over the period under investigation, it is not difficult to use these labels for identifying each party.

(7) These variables are usually constructed to reflect the level of economic development that the country has achieved. It has also become clear that once the countries pass through a certain level of development those variables lose their explainatory power. It is safe to assume that, once a high level of economic development is reached, other factors besides economic variables will determine the degree of government's involvement in the economy (see Abizadhe and Gray 1986).

(8) It should be noted that there is no common consensus among economists as to what constitutes full employment. Here we assume that the deficit varies with the level of employment (i.e., *ceteris paribus*, higher deficit exists during the recession because of the built-in stabilizer and it is expected that the deficit would fall during recovery). In the absence of a common consensus as to how full employment should be defined, we use ER as the best available alternative.

(9) A meaningful measure of government activity must, of course, include all levels of government in a federal system. This, however, does not lend itself as a useful exercise in the context of the present paper since the roles of local governments differ substantially from one country to another in our sample.

(10) For alternative test purposes, we defined the size of government both as a proportion of national income and in absolute (real and nominal) terms. However, the results for real expenditure (GR) are reported in the text, regression results from alternative models are available from the authors.

(11) See Chart E for more detail on this variable.

(12) See Chart F Table A.1 for more detail on the variables and the nature and sources of data.

(13) M1 is used to represent the money supply since it is believed that it is a better proxy for liquidity.

(14) No doubt present budgetary experience in the United States is supportive of our claim. As Modigliani (1983) has pointed out "we have to remember that in all reasonably developed countries the government finances its deficits by selling bonds, not by printing money it cannot print." (p. 53).

(15) It is also interesting to note that it was not possible to establish a link between the level of deficit and the type of political party in power using similar models that are used to test the relationship between the government size and political parties.

(16) Note that equations 2 and 3 use GR as the dependent variable whereas we have used either G/GNP or G as our independent variable in equations 4.a and 4.b. One may conclude that the link between the factors affecting the size of government and the rate of inflation is broken in our analysis. However, as explained earlier, regardless of the definition used for the size of government, our hypothesis of the direct relationship between the size of goverment and the position of the party's leader in power is maintained. See footnote 10.

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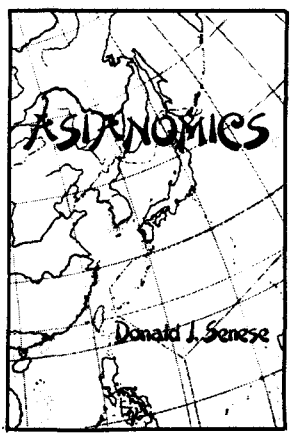

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THE LAFFER CURVE: RESULTS FROM ALTERNATE MODELS

By Robert Batemarco

I. Introduction

The Laffer Curve has been highly visible in recent years as a means of justifying the tax cuts implemented by the Reagan administration in 1981. Advocates of that strategy counted on lower tax rates stimulating economic growth to such an extent that tax revenues would actually rise.(1) They presumed that marginal tax rates were in excess of revenue-maximizing rates (or on what is referred to as the prohibitive range of the Laffer Curve).(2) Such statements were made and contested in the virtual absence of any attempt to calculate the rate at which tax revenues peak.

Since then, a number of models have been developed which calculate values of that rate which correspond to different parameter values. In section II, we describe the chief characteristics of the most prominent among them. In section III, we use one of them to determine the nominal revenue-maximizing tax rates and present those results in tabular form. In section IV, we alter the model so as to find the tax rates which maximize real, as opposed to nominal, tax receipts. In section V, we look at the implications of some of the labor market elasticities which have been calculated and we summarize our conclusions.

II. Previous Models

The five models we will describe here are those developed by Stuart;(3) Fullerton;(4) Canto, Joines and Laffer;(5) Feige and McGee;(6) and Shaller.(7) The Stuart model is a general equilibrium utility-maximization model in which individuals must allocate their (fixed) labor time between the taxed market sector and the untaxed underground sector. His labor supply elasticities are allowed to vary as do marginal tax rates and he takes into account the difference between marginal rates and average rates.(8) For Sweden, he finds the revenue maximizing tax rate to lie between 69 and 73%, although he does not state his assumptions regarding elasticity.(9) For the United States, various rates he finds at various elasticities are listed in Table 1.

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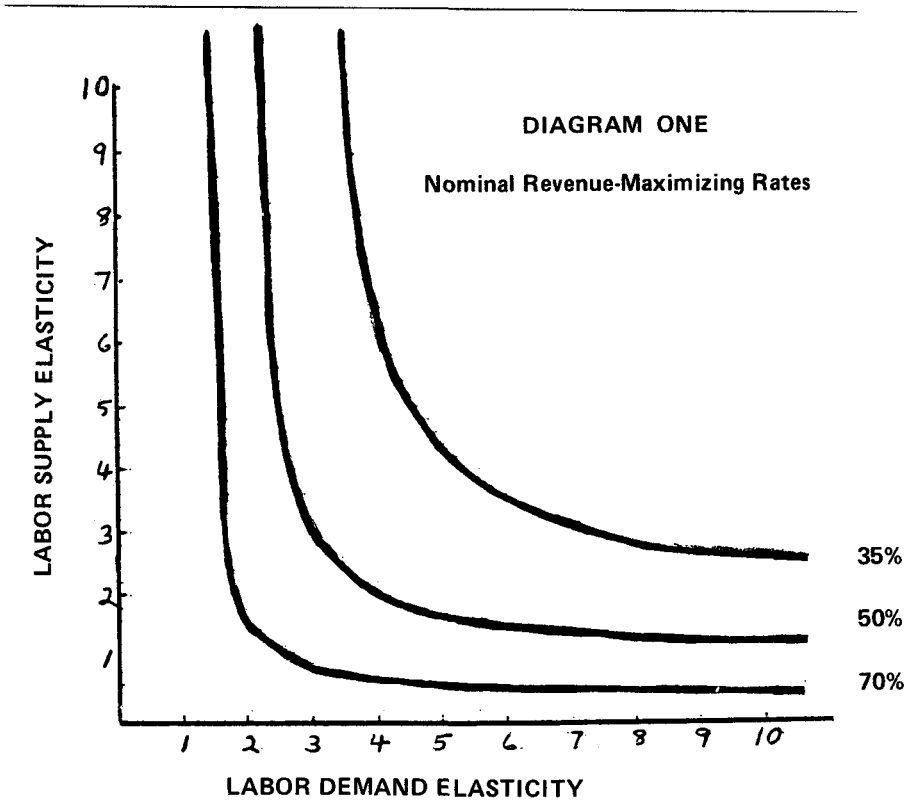
CHART ONE

$$(1) \quad L_D = AW^{-n}$$

and

$$(2) \quad L_S = B\left[(1-t)W\right]^{m}$$



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Canto, Joines and Laffer develop a model which, while similar to Stuart's, surpasses it by taking into account capital as well as labor. However, it assumes that average tax rates are equal to marginal tax rates. Illustrative calculations were performed for different tax structures (since capital is being taxed as well as labor). Assuming demand elasticity for labor to be 4 and that the optimum tax (or subsidy) was set for capital, tax revenues would be maximized at slightly higher rates (for any given demand elasticity of labor) than in Stuart's model, as can be seen in Table 1.

Feige and McGee incorporate in their model three factors which influence the rate at which tax revenues are maximized: 1) the ease with which people can move into the underground economy; 2) the ease with which they can substitute leisure or untaxed home production for market production; and 3) the progressivity of the tax structure.(10) The combination of underground economy, factor elasticity and tax rate progressivity parameters which they consider most plausible yields 58% as the rate which would maximize tax revenues for Sweden.(11)

The Shaller article differs from all those discussed up to this point in being consciously macroeconomic in design. This means adding a goods market and a money market to the type of labor market models included in most micro treatments of the Laffer Curve. He concludes from this model that regardless of the level of taxation and of labor supply elasticity, lower rates will increase tax revenue *only* if both 1) the tax cut directly reduces real interest rates and 2) aggregate labor demand elasticity is greater than one.(12) Shaller's model could also be used to derive revenue-maximizing tax rates, which can be found in Table 1. His results are based on an infinitely elastic demand for labor.

Fullerton develops two models, one of which we elaborate on and adapt in the remaining sectors of this paper. The other one we will describe at present. It is a large scale (19 producers and 12 consumer groups differentiated by income class) general equilibrium model. The model takes into account the progressivity of the tax structure. Simulations of this model are used to find revenue-maximizing tax rates. Those results appear in Table 1.

III. Elasticities and the Maximization of Nominal Revenue

The second model found in Fullerton(13) is partial equili-

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TABLE A-1

Elasticity Estimates in the Literature

Labor Supply Elasticities

Author (Date)	Value(s)	Description of Sample
		Males
Finegan (1962)	-.35 to -.25	Family heads
Hill (1973)	-.32 to -.07	Poor family heads
Rosen (1969)	-.30 to -.07	Family heads
Fleisher-Parsons-Porter (1973)	-.25 to -.10	Aged 45-59
Owen (1971)	-.24 to -.11	Family heads
Greenburg-Kosters (1973)	-.16 to -.05	Poor family heads
Ashenfelter-Heckman (1973)	-.15	Family heads
Boskin (1973)	-.07 to +.18	Assorted
Ashenfelter-Heckman (1974)	0	Married
Burtless-Hausman (1978)	0	Low-income
Hausman (1981)	0	Married
Kalachek-Raines (1970)	+.05 to +.30	Family heads
Atrosic (1982)	+.19 to +.39	All males
		Females
Finegan (1962)	-.095	All females
Leuthold (1968)	-.067	All females
Boskin (1973)	-.05 to +1.60	Assorted
Kalachek-Raines (1970)	+.20 to + .90	All females
Hausman (1981)	+.50	Household heads
Ashenfelter-Heckman (1974)	+.87	Married
Schultz (1980)	+.88	Blacks
Hausman (1981)	+.90	Married
Schultz (1980)	+1.26	Whites
Hanoch (1980)	+1.44	All females
Rosen (1976)	+2.30	All females
Cogan (1980)	+2.45	All females
Heckman (1976)	+4.31	All females
Heckman (1980)	+4.83	All females
		Aggregate
Winston	-.11 to -.05	-
Lucas-Rapping (1970)	0 to +1.12	Long-run
McCurdy (1981)	+.05 to + .13	-
Killingsworth (1983)	+.15	-
Lucas-Rapping (1970)	+1.35 to +1.58	Short-run

SOURCES: Fullerton, p. 18 and Stuart (1984), pp. 359-360.

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TABLE A-2

Labor Demand Elasticities

Author (Date)	Value	Description of Sample
Nadiri-Rosen (1974)	+.11	Production
Tinsley (1971)	-.06	-
Nadiri-Rosen (1974)	-.14	Non-production
Brechling-Mortensen (1971)	-.15	-
Coen-Hickman (1970)	-.18	-
Nadiri (1968)	-.19	-
McKinnon (1963)	-.29	-
David-Van De Klundert (1965)	-.32	-
Chow-Moore (1972)	-.37	-
Waud (1968)	-.40	Non-durable goods
Brown-De Cani (1963)	-.47	-
Clark and Freeman (1980)	-.50	-
Liu-Hwa (1974)	-.67	-
Dhrymes (1969)	-.75	-
Hamermesh (1975)	-.89	-
Lucas-Rapping (1970)	-1.09	-
Waud (1968)	-1.51	Durable goods
Pigou (1933)	-3	-
Douglas (1934)	-3 to -4	-

SOURCES: Hamermesh, pp. 512-513, Waud, pp. 416-417 and 419-420, Douglas, p. 501, Pigou, p. 97, and Clark and Freeman, p. 518.

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CHART TWO

$$(3)\quad AW^{-n} = B\left[(1-t)W\right]^{m}$$

Solving for W, we get:

$$(4)\quad \left[\frac{A}{B}(1-t)^{-m}\right]^{\frac{1}{n+m}} = W$$

Substituting this expression into the demand for labor equation gives us:

$$(5)\quad A\left[\frac{A}{B}(1-t)^{-m}\right]^{\frac{-n}{n+m}} = L$$

From this, we can determine a wage bill (WL) of:

$$(6)\quad WL = A\left[\frac{A}{B}(1-t)^{-m}\right]^{\frac{1-n}{n+m}}$$

This makes tax revenue (WLt) equal:

$$(7)\quad WLt = tA\left[\frac{A}{B}(1-t)^{-m}\right]^{\frac{1-n}{n+m}}$$

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CHART TWO [continued]

It is this expression whose first derivative equals zero at the tax rate which maximizes revenue.

$$(8)\ \frac{dWLt}{dt} = A\left(\frac{A}{B}\right)^{\frac{1-n}{n+m}} (1-t)^{\frac{nm-n}{n+m}} \left(1-\frac{nm-m}{n+m}\ \frac{t}{1-t}\right)$$

The only way this expression can be zero for a tax rate below 100% is if $\left(1-\frac{nm-m}{n+m}\ \frac{t}{1-t}\right)$ equals zero. Setting it equal to zero and solving for t gives us:

$$(9)\ t^* = \frac{n+m}{n+nm}$$

Recalling that m is the supply elasticity of labor and n is the absolute value of the demand elasticity of labor, we can rewrite this is:

$$(10)\ t^* = \frac{|E_d| + E_s}{|E_d| + |E_d|}\ E_s$$

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brium in nature, looking only at the labor market. It assumes supply and demand functions for labor which exhibit constant elasticities at all points. Labor demand depends on gross (before-tax) wage rates and labor supply depends on net (after-tax) wage rates. Taxes are assumed to be proportional. The simplest formulations for such functions(14) are described in Chart One.

L_D and L_S stand for the quantity of labor demanded and supplied, respectively; W stands for the nominal wage rate; t is the percentage of income collected in taxes and A, B, n and m are constants. All variables and constants in the model are constrained to have non-negative values. The variable t is further constrained to lie between 0 and 1. The model is constructed so that -n is the elasticity of demand for labor and m is the elasticity of the supply of labor.

The tax rate (t*) which maximizes tax revenue (WLt) is the one at which $\frac{dWLt}{dt} = 0$. To solve for the equilibrium amount of labor expressed in terms of constants and the tax rate, one must first set equation (1) equal to equation (2) (see Chart Two.)

One thing to note about this model is that there is no prohibitive range of the Laffer Curve unless the demand for labor is elastic. With either inelastic or unit elastic demand for labor, tax revenue rises asymptotically as the tax rate approaches 100 per cent regardless of the elasticity of the supply of labor. We illustrate this in Table 2.

The reason there is no prohibitive range when labor demand is not elastic is that higher taxes do not, in the long run, leave wage rates unchanged as they may in the short-run. Higher tax rates, by reducing the after-tax wage rate, will reduce the quality of labor supplied at any before-tax wage rate. This creates a shortage of labor which can only be eliminated by employers bidding wages up. It is these higher wage rates which force employers to cut back on hiring. When labor demand is inelastic, however, those cutbacks are not sufficient to prevent the wage bill from actually rising as tax rates increase. Obviously, a higher tax bite from an increasing base can never result in lower revenues. With unit elasticity, what we have is a higher percentage of a constant wage bill, which also yields increasing revenues.

With elastic demand for labor this model does yield a pro-

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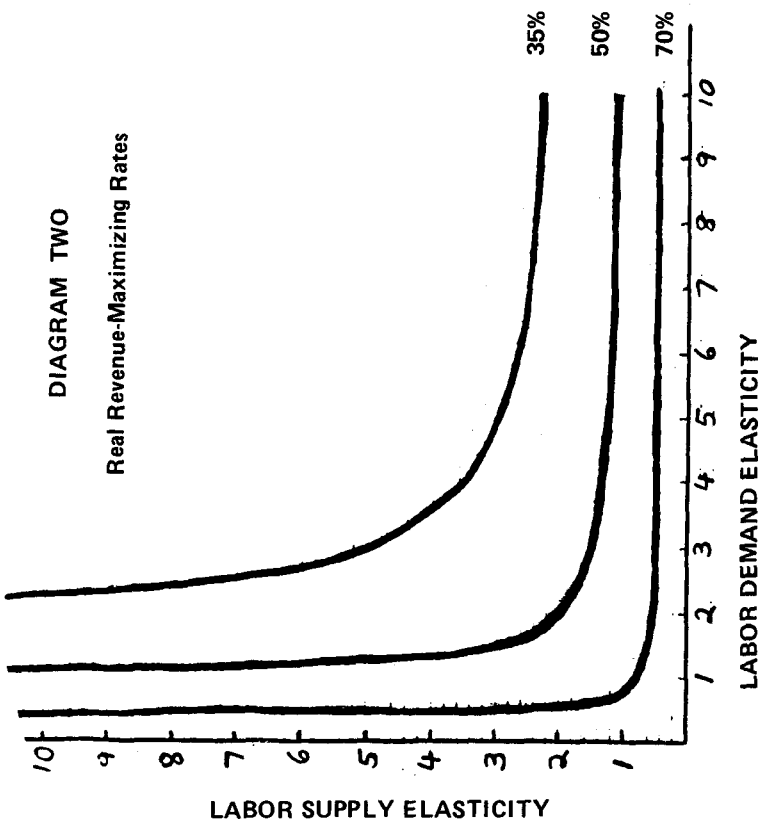

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TABLE ONE

Revenue-Maximizing Tax Rates at Various Labor Supply Elasticities According to Different Models

Model	Labor Supply Elasticity											
	0	.1	.15	.318	.4	.5	.636	.7	1	1.5	4	5
Stuart (1984)	85%	-	-	71%	-	-	63%	-	-	-	-	-
Canto, Joines and Laffer[a]	-	91%	-	-	71%	-	-	59%	50%	37%	-	-
Shaller[b]	-	91%	-	-	71%	-	-	59%	50%	40%	-	-
Fullerton	-	-	79%	-	-	62%	-	-	48%	40%	29%	-
Feige and McGee[c]	100%	91%	-	-	-	67%	-	-	50%	-	-	17%

[a]Labor demand elasticity is -4 and tax rates on capital vary along with the rate on capital to maximize revenue.

[b]Labor demand elasticity is assumed to be infinite.

[c]A weighted average of supply elasticities of labor and capital is used, rather than a pure labor supply elasticity.

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TABLE TWO

The Case of Inelastic Demand

Demand Elasticity = -0.5 Supply Elasticity = 1

Tax Rate	Employment	Gross Wage Rate	Gross Wage Bill	Tax Revenue
0%	1.00	1.00	1.00	0.00
20%	0.93	1.16	1.08	0.22
40%	0.85	1.41	1.19	0.48
60%	0.74	1.84	1.35	0.81
80%	0.58	2.92	1.70	1.36
99%	0.22	21.5	4.62	4.58

The Case of Unit-Elastic Demand

Demand Elasticity = -1 Supply Elasticity = 1

Tax Rate	Employment	Gross Wage Rate	Gross Wage Bill	Tax Revenue
0%	1.00	1.00	1.00	0.00
20%	0.89	1.12	1.00	0.20
40%	0.77	1.29	1.00	0.40
60%	0.63	1.58	1.00	0.60
80%	0.45	2.24	1.00	0.80
99%	0.10	10.00	1.00	0.99

The Case of Elastic Demand

Demand Elasticity = -5 Supply Elasticity = 1

Tax Rate	Employment	Gross Wage Rate	Gross Wage Bill	Tax Revenue
0%	1.00	1.00	1.00	0.00
20%	0.83	1.04	0.86	0.17
40%	0.65	1.09	0.71	0.28
60%	0.47	1.16	0.54	0.32
80%	0.26	1.31	0.34	0.27
99%	0.02	2.16	0.05	0.05

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CHART THREE

(10) $tA \left(\frac{A}{B}\right)^{-m} (1-t)^{\frac{-n}{n+m}}$

We obtain, by differentiation:

(11) $$A\left(\frac{A}{B}\right)^{\frac{-n}{n+m}} (1-t)^{\frac{nm}{n+m}} \left(1-\frac{nm}{n+m}\ \frac{t}{1-t}\right)$$

This expression will be found to equal zero whenever $t = \frac{n+m}{n+m+nm}$.

Table 4 shows the values of t* obtained from this expression.

TABLE THREE

Revenue-Maximizing Tax Rates (percent)

E_d \ E_s	0	0.2	0.4	0.6	0.8	1	2	5	10	50
-1	100	100	100	100	100	100	100	100	100	100
-2	100	92	86	81	78	75	67	58	54	51
-5	100	87	77	70	64	60	47	28	27	22
-10	100	85	74	66	60	55	40	25	18	12
-50	100	84	72	63	56	51	35	18	11	4

TABLE FOUR

Tax Rates Maximizing Real Revenues (per cent)

E_d \ E_s	0	.2	.6	1	2	5	10	50
0	100	100	100	100	100	100	100	100
-.2	100	91	87	86	85	84	84	83
-.6	100	87	77	73	68	65	64	63
- 1	100	86	73	67	60	54	52	50
- 2	100	85	68	60	50	41	38	34
- 5	100	84	65	54	41	29	23	18
-10	100	84	64	52	38	23	17	11
-50	100	83	63	50	34	18	11	4

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hibitive range for the Laffer Curve. To see how the tax rate which separates the normal range from the prohibitive range (i.e., t*) varies as elasticities change, we have calculated a number of values of t* at different combinations of supply and demand elasticities and arrayed them in Table 3. Finally on diagram 1, we show three curves which depict all combinations of supply and demand elasticities of labor for which the rates indicated maximize nominal tax revenues. The rates we have chosen were 70% (the rate prevailing prior to the 1981 tax cuts), 50% (the current maximum rate), and 35% (the maximum rate called for in the current tax bill).

IV. The Model in Real Terms

To the extent that most government transfer programs are now indexed and that government's exhaustive expenditures are also quite sensitive to price level changes, merely increasing nominal tax revenues might not succeed in reducing budget deficits. That task requires us to increase real tax revenues. The model we have used so far, however, is formulated entirely in nominal terms. What is true about the changes in the nominal variables we have discussed will be true of the corresponding real variables only if prices remain unchanged. This is not likely to happen in the model, however. To the extent that higher tax rates reduce both output and employment, they must, in the absence of monetary change, increase prices.(15) This would be true both because there are fewer goods being chased by the same amount of money and there are higher wage rates which must be passed on in the form of higher prices if we are to maintain levels of output.

Product prices are not determined within the model. The one clue we have as to the behavior of prices in the model, however, is the behavior of wages. The increase in wages as tax rates increase is the upper limit because for prices to increase at the same rate would mean no increase in real wages at all. However, since fewer workers are employed at higher tax rates, the marginal product of those remaining employed will be higher. Thus, in equilibrium, their real wages will be higher. As a result, assuming prices to rise in proportion to wages will cause our model to overstate the adverse impact of tax rate increases on

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the real value of tax revenues. The values of t* derived under that assumption then will be the lower bounds of possible value.

Calculating the tax rate which maximzes real revenues differs from the calculation which maximizes nominal revenues. The difference is that instead of setting derivative of equation 7 equal to zero, we must first divide that equation by the equilibrium wage rate (equation 4). (See Chart Three).

Table 4 shows the values of t* obtained from this expression.

As we would expect, the rates in Table 4 are lower than the rates for each corresponding set of elasticities in Table 3. In both tables, however, higher elasticities, whether of supply or demand, give rise to lower rates at which revenues start to fall.

V. The Model, Current Elasticity Values, and the Case for Tax Reduction

The findings made here must be taken with a good deal of caution because of problems inherent in the Laffer Curve itself. The Laffer Curve has been framed in terms of a single tax rate for the whole economy. This is an oversimplification which is grossly inconsistent not only with reality, but with other aspects of supply side economics.(16) While the emphasis placed by the proponents of the Laffer Curve on the distinction between average and marginal tax rates indicates their own awareness of the problem, only Feige and McGee, and Fullerton address it. Indeed, the models we look at in sections III and IV assume marginal rates to equal average rates.

Furthermore, just as there is no single tax rate valid for the whole economy, neither is there a single pair of labor elasticities which accurately characterize the whole economy. Thus, attempts to use our results to predict the effects of tax rate changes on tax revenues will succeed only to the extent that they apply the model to as many small groups facing different marginal tax rates and elasticities as the data permit one to obtain.

These warnings made, let us look for some revenue maximizing tax rates for different sectors of the population. It should

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be noted here that calculation of disagregated elasticities has not proceeded sufficiently to permit us to heed fully the advice we proffered in the previous paragraph. Labor supply elasticities have been calculated for both men and women. From various sources we have found a range of -0.40 (indicating that they are on the backward-bending part of the labor supply curve) to +0.30 for men and -0.095 to +4.83 for women.(17)

Demand elasticities similarly cover a broad range, going from +0.11 to -4.0 We have assembled an appendix listing the best-known estimates of both supply and demand elasticities for labor. They give us a full picture of the possible extremes as well as the median values for our elasticities. We can then plug them into our model to see which side of the Laffer Curve we are on at present.

Taking the highest elasticity values within these ranges (-4.0 demand elasticity, 4.83 supply elasticity for females and 0.39 supply elasticity for males) would give us t* (in nominal terms) of 79% and 38% for men and women respectively. The t* which maximizes real tax revenue would be 74% for men and 31% for women. Taking the lowest values(18) (-0.06 demand elasticity, -0.40 supply elasticity for men and -0.095 supply elasticity for women) would give us t* of 100% for men and women in real and in nominal terms. Finally, taking mid-points of these ranges (-2.03 demand elasticity, -0.005 supply elasticity for males, and +2.37 for females) gives us t* of 100% for men and 64% for women in nominal terms and 100% for men and 48% for women in real terms.(19)

Even on the assumptions most favorable to our being on the prohibitive range of the Laffer Curve, men have not been on it since 1963. There may, however, have been some additional revenue collected from women in higher brackets when rates were cut in 1981. Thus, this model, along with the others described, shows the Laffer Curve to furnish scant reason for reducing federal tax rates.

This should by no means be taken to indicate that there are no reasons for the federal government to reduce tax rates. It simply means that the prospect of such action raising more revenues and, thus, helping to balance the budget is not one of them. Among reasons whose validity is untouched by this analysis are:

1) that lower tax rates would stimulate output (except

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on the backward-bending part of the labor supply curve) and reduce the extent to which production decisions are distorted;(20)

2) that people may desire a smaller amount of government spending on goods and services than is at present being provided for;(21) and

3) that income earned belongs to income earners and not to the government and that those income earners can be better trusted to dispose of that income wisely than can the government.(22)

In conclusion, we have examined several models (one in great detail) which can be used to determine the rate of taxation which maximizes tax revenue. On the basis of the information we have regarding elasticities, we conclude that, with the possible exception of women in the highest tax brackets, the U.S. tax system is not in the prohibitive range of the Laffer Curve.

FOOTNOTES

* I would like to thank Drs. Hope Corman, Anthony Liuzzo, James Suarez, John Tomer, Sushila Gidwani and Emily Sun for useful suggestions. Any remaining defects are the sole responsibility of the author.

(1) See Bruce Bartlett's *Reaganomics: Supply-Side Economics in Action,* (New Rochelle: Arlington House, 1981).

(2) Jude Wanniski, "Taxes, Revenues and the 'Laffer Curve'," *The Public Interest* 50 (Winter 1978): 5.

(3) Charles E. Stuart, "Swedish Tax Rates, Labor Supply, and Tax Revenues," *Journal of Political Economy* 89 (October 1981): 1020-1038 and "Welfare Costs per Dollar of Additional Revenue in the United States," *American Economic Review* 74 (June 1984): 352-362.

(4) Don Fullerton, "On the Possibility of an Inverse Relationship between Tax Rates and Government Revenues," *Journal of Public Economics* 19 (1982): 3-22.

(5) Victor, A. Canto, Douglas H. Joines, and Arthur B. Laffer, *Foundations of Supply Side Economics: Theory and Evidence*, (New York: Academic Press, 1983).

(6) Edgar L. Feige and Robert T. McGee, "Sweden's Laffer Curve: Taxation and the Unobserved Economy," *Scandinavian Journal of Economics* 85 (1983): 499-519.

(7) Douglas R. Shaller, "The Tax-Cut-But-Revenue-Will-Not Decline Hypothesis and the Classical Macromodel," *Southern Economic Journal* 49 (April 1983): 1147-1154.

(8) Stuart, (1981), p. 1022 and (1984) pp. 355-356.

(9) Ibid. (1981), pp. 1021 and 1029.

(10) Feige and McGee, p. 500.

(11) Ibid., p. 511.

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(12) Shaller, p. 1153.

(13) Ibid., pp. 8-10.

(14) In what follows, we use different notation but otherwise adhere to Fullerton's model completely.

(15) Indeed, in the real world, where our *ceteris paribus* conditions do not hold, the monetary policy likely to be used to prevent such unemployment from materializing would cause an even larger price increase than the model will indicate.

(16) Donald W. Kiefer, "An Economic Analysis of the Kemp/Roth Tax Cut Bill, H.R. 8333," in *The Economics of the Tax Revolt: A Reader*, edited by Arthur B. Laffer and Jan P. Seymour, (New York: Harcourt Brace Jovanovich, 1979), pp. 14-15.

(17) Charles L. Ballard, John B. Shoven, and John Whalley, "General Equilibrium Computations of the Marginal Welfare Costs of Taxes in the United States," *American Economic Review* 75 (March 1985): 131, David Henderson, "Limitations of the Laffer Curve as a Justification for Tax Cuts," in *Supply-Side Economics: A Critical Appraisal*, edited by Richard H. Fink, (Frederick, Maryland: Aletheia Books, 1982), p. 226, Fullerton, p. 152, and Stuart (1984), p. 360.

(18) This is true, if we exclude Nadiri and Rosen's positive demand elasticity for labor.

(19) Some scepticism may be in order regarding the results obtained at supply elasticities approaching zero. Our model holds elasticity constant regardless of the tax rate. As tax rates approach 100%, however, it is quite unlikely that elasticity will remain at the zero level.

(20) James Wilde, in "Labor Supply and Tax Rates: Comment," *American Economic Review* 74 (December 1984): 1106, notes that the tax rate which maximizes output is not likely to coincide with the rate which maximizes revenue.

(21) This is the thrust of Kiefer's rejection of Jude Wanniski's assertion that the rate yielding maximum revenue is the rate at which the public desires to be taxed, pp. 17-18.

(22) Herbert Stein, in making this same point, goes on to note that "the burden of proof is not on the taxpayer to show why he is entitled to keep what he has earned. It is his money. The burden of the proof is on those who would take it away from him, to show that it is needed to meet imperative social needs," "The Real Reasons for a Tax Cut," *Wall Street Journal*, July 18, 1978, reprinted in Laffer and Seymour, p. 54.

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BOOK REVIEWS

PLANNING IN EASTERN EUROPE
edited by Andrew H. Dawson
St. Martin's Press, New York

Editor Andrew Dawson, of the Scottish University of St. Andrews, commences his task with a general analysis of the historical circumstances under which the Soviet armies took control of East Europe, following the collapse of the Axis powers. He emphasizes the importance of the Stalinist model, since it was under Stalin that these countries were subjugated, and also identifies the extent to which Stalinist policies have subsequently been modified.

He then turns to a country by country study, arranging this, curiously enough, in alphabetical order, instead of by any more objective rationale. Nevertheless, the editor is to be commended on a very useful book, with ample data presented in very readable form. The differences between the planning approach of each country and between the problems faced by each country are made readily apparent.

Thus, Albania was for decades the ideologically most strict of Marxist countries, but: ". . . the future path of Albania's economic and political development remains in some doubt. As in the Soviet Union after Stalin, and in China after Mao, the removal of a resolute leader may also precede major changes in Tiranë's corridors of power."

Bulgaria has experienced a vast growth of population, from under seven million to almost 9 million between 1945 and the mid-1980s. What was formerly an agrarian country now has over 75% of its population engaged in other activities, and over a third involved in manufacturing. There has been an economic revolution under the direction of the Marxist government, but one which has not benefited the Bulgarian people – or even the state itself – as much as its planners expected.

Czechoslovakia was a leading industrial nation in pre-War and World War II days, but in 1945 its three million German minority (incorporated into Czechoslovakia when Germany was stripped of territory after its defeat in World War I) was cruelly expelled, and Soviet measures designed to harness Czecho-

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slovakia as a major engine for the benefit of the Soviet Union resulted in severe damage to the Czech economy. Historic towns and cities, only lightly damaged in World War II, have been but poorly maintained, although recently some interest has developed around the preservation of a few of Prague's galaxy of architectural treasures. Instead, vast new housing areas were established. These were architecturally horrendous and Bratislava has become little more than a disjointed high rise sprawl. The Czech people themselves clearly prefer their traditional country towns to the vast, ugly industrial conglomerates that Marxist planning has created.

The so-called German Democratic Republic is the saddest of East European countries, despite the efficiency of the captive German population, which is reputed to be the one people who have been able to make Communism productive. The Allies vindictively destroyed all the major cities, and left German communications in chaos. For some years after 1945, there were few males of working age left, the others being either dead or prisoners in Siberian slave camps, and what the bombers and artillerymen had left of industry in East Germany (originally Central Germany) was looted and transferred to Russia. But the women of East Germany bravely carried on, despite shameful treatment by the occupying Soviet forces, until some of their menfolk returned and a fresh generation of German youth grew up. Thus the country made a remarkable recovery, and the editor reports: ". . . the GDR has been obliged to adapt its inherited pattern of production and settlement to fit its post-war geo-political context, and much has been achieved at the same time as it has continued to raise output and to remain the richest of the East European states in terms of gross national product per capita . . ."

Hungary has shown some flexibility, and the author reports that: "As Hungarian society has become more complex, so the nature and tasks of planning have changed. During the 1950s planning was virtually synonymous with programmes to spread industry more widely across the country, but in more recent years the emphasis has become one of improving the country's infrastructure and expanding service provisions in the interests of the population at large. At the same time concern about the deterioration of the environment has grown rapidly amongst the public. Moreover, there are signs that Hungary will soon enter

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the post-industrial phase of development, for the numbers employed in basic and manufacturing industry are already beginning to drop, while the tertiary and quaternary sectors are growing in importance . . ."

Poland has had a hard path, somewhat akin to that of East Germany, with a vast expropriation of land to the Soviet Union at the end of World War II. It received heavily damaged territory from Germany by way of compensation – and as a means of ensuring that Poland would remain in fear of Germany and would be unlikely to align itself with East Germany against the Soviet Union. The Polish recovery, like that of the East Germans, has been impressive, but despite rich natural resources, the initiative and industrial experience of the Polish people themselves, and the heavy loans taken by the Marxist government from the West, the constant demands of the Soviet Union for any surplus the Poles were able to produce, has resulted in a very low standard of living. The author comments:

". . . The 1981-1985 Five Year Plan was abandoned, and the targets for the long-term plans, both economic and spatial – which had been ambitious – became unattainable. Thus, the Polish government failed yet again to achieve sustainable economic growth at a pace and in a way which was consonant with the rising expectations of the Polish people . . ."

Romania is a prime example of planning that has not worked. Romanian bureaucrats, under the strict control of the government, are inclined to assume that when something does not work, it is not the fault of the plan but of the uneducated level of those who were supposed to implement it. The cities have grown too fast, under government pressure to industrialize rapidly, and a fanatic attachment to socialist goals has deprived the country of much of its historical appeal. By contrast, Yugoslavia, which one might expect to be handicapped by its variety of nationalities and resultant ethnic tensions, has made rapid economic progress. Precisely because of the vitality of its component ethnic groups, each eager to maintain their status, planning has been decentralized, and national pride has given the workers something to live and work for.

The author concludes with a valuable chapter on Comecon. While in theory this is a super-plan intended to help all member countries: "Wherever the balance of influence lies, it is clear that, unlike the European Community, there are no investment

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funds available for regional aid, and that in COMECON finance comes indirectly through individual projects which have been agreed jointly between partners, almost all of which have been related to industry, and have usually involved the Soviet Union to some degree of other."

The author considers that Comecon has partially achieved some of its intended socialist goals, notably the equalization of wealth throughout the area, and also the improvement of communications between the satellite countries and the Soviet Union, helping to mold the captive countries into a single strategically and economically integrated unit serving Soviet goals and Soviet centralization. In short, it has helped to exploit the individual countries and bond them into an integral economic unit. While not prejudiced against Comecon the author expresses the opinion that: "Nevertheless, trade relations between COMECON members have not always been cordial. After Stalin's death it was openly admitted that the Soviet Union had overcharged some countries, notably Poland, for exports and underpaid for imports, and other countries have complained of unfair Soviet trade practices. Pricing has apparently often been 'political' and on the basis of what the trade would bear . . ."

He also warns that: "Common difficulties face the members of COMECON in stimulating the overall economy of the bloc. The need for economic reform is generally recognised, but there is a fear that reforms of the type and scale which would truly improve productivity and efficiency, and allow rapid modernisation, would dangerously upset the political balance. For instance, it might no longer be possible to conceal unemployment, which is now achieved quite successfully, and reforms might generate demands of the type voiced by Solidarity in Poland . . ."

"A common dilemma is how to keep the population content. Living standards have risen, but there are expectations of still better things to come – a belief which is constantly emphasised by party propaganda – and appreciable pressure for rapid and substantial improvements, perhaps generated by a growing knowledge of the material quality of life in the West. These aspirations may be dashed as members shift scarce resources to the industrial sector and to exports to pay off their vast foreign debts, and this could create an unhappy, disillusioned population, with many dangerous political consequences. In countries

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such as Czechoslovakia the government would no doubt like to allow more consumer goods, but they are afraid to do this for in an environment in which there are still marked variations in living standards between member countries, gains in one country may not always be viewed sympathetically in the others."

Every effort has been made to bring the text up to the present date, and this adds markedly to the book's utility.

LATINO ETHNIC CONSCIOUSNESS: The Case of Mexican Americans and Puerto Ricans in Chicago
Felix M. Padilla
University of Notre Dame Press, Notre Dame, Indiana

The United States is experiencing a massive immigration of both legal and (proportionately much larger) illegal aliens, as a result of which Congress recently passed legislation to grant amnesty to all illegal immigrants who had found jobs in the States. This was accompanied by a program whereby millions of now legalize immigrants might become American citizens at an early date. The author of this book has chosen to focus attention on the political activities of the millions of Mexican and Hispanic immigrants who comprise the largest single component of this major population move. While the Cuban refugees (excluding the criminal element shipped to the USA by Castro) and many others amongst the legal and illegal Latino immigrants are generally conservative, hard-working and non-disruptive, strong radical organizations have emerged among sections of the Latino population. Felix Padilla's study is therefore both timely and enlightening. Further illegal immigrants will assuredly continue to pour into the United States from Latin America and other parts of the world, since the U.S. still fails to allocate adequate funds to protect its borders, and the new requirements placed upon employers to hire only U.S. nationals or legal immigrants will be unenforceable without the issue of forgery-proof identity cards. This is presently a political impossibility.

The author of *Latino Ethnic Consciousness* has selected the Hispanics of Chicago as the subject for his intensive study, believing that they are largely representative of Hispanics in other major U.S. cities – with the exception, perhaps, of those towns on the border of Mexico, where Hispanics already out-

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number white Americans and control the political machinery completely. Padilla finds that there are essentially two categories of Latino or Hispanic ethnic consciousness. The first is a natural awareness of cultural differences and cultural bonds, which is not particularly political in its impact. The other is a far more radical political consciousness of the power which ethnic unity, *exploited as class unity,* lends to a people who are united by obvious ties of linguistic and racial identity. Thus author Padilla comments:

"Not always are the ideological formulations of Latino political consciousness homogenous. First, some of the study's respondents use the "presumable cultural aspects" of an "Hispanic tradition" in their expression of Latino ethnic identification. In this case Mexican Americans, Puerto Ricans, Cubans, Central and South Americans have a consciousness-of-kind as Latinos or Hispanics based on the sharing of the Spanish language.

"This cultural-political definition of Latinismo is used by organization leaders who represent traditional-reformist groups. By traditional-reformists I mean those organizations whose programs or tactics reply on the conventional electoral process of creating social change.

"Another group of community organization leaders posits their Latinismo as an identity to which they have an obligation. They see a Latino-conscious person as a participant who directly confronts (via any method including protest) the systems of cultural discrimination and inequality of the larger society. In this case Mexican Americans and Puerto Ricans are often viewed as having or sharing a consciousness about Latinismo because they are the groups who collectively participate in combatting inequality in the larger American scene. In other words, conflict-oriented organizations (as I have classified this group) are more likely to include action-oriented actors and groups in their definition of the Latino group and exclude those who do not participate in direct action."

What first gave Hispanic and Latino migrants the idea of active political "protest" in the land they had entered was the extremely sympathetic legislation which had been passed in the U.S.A. in favor of the historic Black community, which legislation included provisions for "Affirmative Action" and the economic advancement of Blacks, which could be extended in

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law to apply to any non-White minority. As the author comments:

"The leading factor responsible for starting Latino ethnic mobilization among Puerto Ricans and Mexican Americans in Chicago during the early 1970s was the Affirmative Action policy. The Affirmative Action policy represented the instrument or mechanism used by leaders from the two communities to make claims against institutions and structures found to be discriminating against Spanish-speaking workers at the city-wide level. Viewed another way, the Affirmative Action policy provided the critical base for the Mexican American and Puerto Rican leadership to advance the interests of their populations collectively rather than as individual or separate Spanish-speaking ethnics . . ."

The author then proceeds to identify the Marxist Alinsky influence within the organizational methods of Latino activism in Chicago:

"T.W.O.'s [The Woodlawn Organization] and the Spanish Coalition for Jobs' relationships with existing institutions are rooted in Saul Alinsky's theory of community organization, which emphasizes the value of building on existing social ties: "the foundation of a People's Organization is the communal life of people . . . [in] the building of a People's Organization . . . the Affirmative Action policy was of great importance for the organization, development, and growth of a Latino identity and agenda . . ."

Saul Alinsky will be well known to readers as a leading exponent of Marxist concepts of revolutionary activism. While Alinsky was active in the U.S., his ideas have had a wide influence amongst revolutionaries in other countries as well. Bernhard Smith reported, in the Spring 1986 issue of *The Journal of Social, Political and Economic Studies* ('Christian Aid: The Politics of Charity') that a group known as the Alinsky Community Training Project, funded in part by the mainline British church organization known as Christian Aid, had promulgated his revolutionary ideas favoring organized activism amongst Blacks in Liverpool, where members of the Black community subsequently rioted over a period of several days in a well-organized campaign of aggression against the police, ensnaring police and firemen into ambushes, tracking police movements with the aid of walkie talkies, and bussing mobile squads of

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rioters, armed with Molotov cocktails (manufactured in specially established "factories") to strategic areas when police and firemen responded to emergency calls.

According to Felix Padilla, Alinsky's principles were adopted by the Hispanic activists in Chicago, whose goal, however, was not violence and social disruption but economic and political targets to be achieved by intimidation. The activist Spanish Coalition for Jobs was formed to target major businesses in the Chicago area. Their first target was the Bell Telephone Company. They approached the management with the following demands:

"(1) 3,000 jobs over a period of three years;

(2) appointment of a Latino Review Committee;

(3) appointment of a liaison person to work with the Latino community and Illinois Bell;

(4) establishment of a training center [specifically for Latinos] in Westown; and

(5) 30 percent of their [Bell Telephone] funds for contributions to organizations to be allocated to the Spanish community."

Such demands meant that local Chicagoans were going to lose employment opportunities in favor of the new Hispanic community, whether or not the employers wished to employ Hispanics. They also required the outright redirection of funds, earmaked by the Bell Telephone Company for charity, to projects and charities favored by the leaders of the activist movement. The question was not simply a demand for jobs, but for what were in fact quotas, and Padilla reports that: ". . . the company's assistant vice president offered 115 jobs for the Spanish community, after stating that the other demands could not be met . . ." The Coalition for Jobs refused the Bell Telephone Company's offer, and proceeded to organize protests.

"This exchange of negotiations followed by protest tactics is indicative of the yearlong adverse relationship between the Spanish Coalition and the Illinois Bell Telephone Company. Basically, there would be negotiations; and when those broke down, picketing would begin of Illinois Bell officials' and executives' homes by members of the Spanish Coalition."

While demonstrations outside business premises have long been regarded as legitimate union activity when they concern workers already employed by that business, the demand here

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was from persons unconnected with the business. "Employ us, in preference to others, or we will disrupt your business activities and tarnish your business image", the activists demanded. Furthermore, there appears to have been no effort made by the authorities to stop the open intimidation of the families of the Bell Telephone executives by demonstrations outside their private homes – something that could be psychologically damaging for young children, and deeply worrying for the parents as individuals. This tactic eventually worked. Once the Bell Telephone Company capitulated, other major companies were targeted, notably the Jewel Tea Corporation.

This time the demands were simple:

"In March 1972 members of the Spanish Coalition for Jobs met for the first time with representatives from Jewel. The major demands presented to Jewel officials were: "(1) a job training program for Latinos, (2) an increase of Latino workers, (3) the hiring of Latinos to administrative positions, and (4) a greater increase in participation by community residents in the superivising of how Latinos are being processed" (*El Informador Newspaper*, 1973:3) . . ."

These demands were backed by picketing and street demonstrations outside Jewel Tea Corporation premises to ensure a decline in business, and thus to blackmail the corporation into acceding to what was, in essence, a protection racket! One would imagine that in a free society no employer could be forced to hire individuals or members of specific ethnic groups against his or her will – and certainly without legislation to that effect. But customers were intimidated to the extent that they avoided business with the Jewel Tea Corporation in sufficient numbers to force the corporation to capitulate.

Under the Reagan administration there has been no legal reversal of the affirmative action atmosphere, although activist groups have sensed that the climate is no longer propitious to permit outright blackmail. Meanwhile, the centers of power are changing as the population changes, and the amorphous so-called "White majority" population of the United States, unwilling to organize itself, and heavily influenced by fears of racial guilt which now form a part of school text book studies, has become uncompetitive. Major American cities are now in the hands of the leaders of minority groups, and statistical projections indicate that the number of Whites in America will be demographically exceeded by "minority" ethnic groups

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within the course of just a few generations.

The Alinskys among the activists are unlikely to bring violent revolution to America, simply because the minorities upon whom they prey will no longer be minorities. The ethnic struggle, if it still persists, will more likely be between increasingly larger communities of Blacks, Hispanics and Asians. Recent evidence of clashes between organized Hispanics, Blacks and Asian interests indicates that this may be a much tougher struggle, since none of these increasingly influential ethnic groups will be handicapped by feelings of guilt in the pursuit of their own group interests.

John G. Wentworth

THE LAND IS SHRINKING:
Population Planning in Asia
Gayl D. Ness and Hirofumi Ando
The Johns Hopkins University Press, Baltimore and London

The authors of this timely book have made an important contribution to our understanding of the current Third World population explosion. Few Americans, and even fewer Western statesmen, give time to understanding this phenomenon, and fewer still realize its enormous significance for the future of humanity.

In the first place the ongoing population explosion is happening away from the centers of the Western world, although the massive exodus of population from the overcrowding resulting from this explosion is already apparent in most Western cities. In the second place there is little individuals can do about it, so they tend to feel that it is pointless to become concerned about it. In the third place, they feel that what is happening is a personal thing, which concerns only those who are producing these large numbers of offspring. This latter view, favored by Christian ethics, has led the Reagan administration to withhold U.S. financial aid from all international efforts to aid Third World governments to educate their peoples to the dangers of over-population. But the demographic explosion is of such gigantic proportions that it truly concerns all who care for the future of posterity, and it is a demographic trend which will surely affect all aboard 'space ship earth'.

While Latin America and Africa contribute generously to

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this explosion, with African women in most sub-Saharan African countries averaging between six to eight live births, the authors have chosen to concentrate their studies on Asia. India and China particularly draw their attention. Both are trying to grapple with the problem of over-population, but by quite different methods and with widely different results. In India, where a weak democratically-elected government attempts to combat the problem, the response to government aided family planning varies widely from state to state, according to the historical and cultural proclivities of the local ethnic populations. In centralized, totalitarian-controlled China, by contrast, all individuals are required to submit their reproductive plans to local committees, and severe economic penalties are enforced upon those who exceed the goals approved for them. In China, it is of interest to note, the authorities are also applying primitive measures program – something which India has been unable and even unwilling to consider.

Other Asian countries are tacitly encouraging emigration as an answer to local overcrowding problems, and there are signs that India is not blind to this potential, with rumors that China may also change its course, and instead of prohibiting the migration of its citizens to lands where they cannot be controlled, may instead encourage migration as a way of reducing the intolerable burden of overpopulation. South Korea actively encourages emigration, realizing that this will not only lighten internal economic pressures but will also build up an ethnic Korean population in North America and other accepting lands which will be racially loyal to Korea in the long run, no matter what the immediate political sympathies of the migrants might be.

The facts are clearly and succinctly stated by the authors, who conclude that:

> Rapid population growth is best seen in the long-tailed exponential growth curve that abounds in popular and scientific analyses of our times. For most of the past eight thousand years or so, the growth of the human population has been less than 0.1 percent per year. For the past three centuries, the rate of growth has been increasing, until now world population growth is about 2 percent per year. It is common to note that this rate of growth cannot continue for long without radical changes in the human environment. For example a 2 percent growth for the

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> next three centuries would give us a world population of about 1,500 billion, compared with the approximately 4 billion who exist today. Further, if this growth continued into the future for a span equal to that of the Christian era, there would be sufficient human beings to cover every bit of matter known in the entire universe . . .

In addition, the authors stress that the world's population is not reproducing evenly. The population of the 'Europoid' or 'White' Western nations is actually in sharp decline, and the population explosion is taking place exclusively among the peoples of Asia, Africa and Latin America:

> . . . the industrial world passed through a demographic transition, from high natural fertility and rapid growth to controlled low fertility and low growth. The nonindustrial world has entered the demographic transition with its declining mortality, but remains marked by high fertility.
>
> Given this situation, it is not the world's population, but the nonindustrial world's population that will people all the known matter in the universe over the next two thousand years.

CHINA AND THE THIRD WORLD: CHAMPION OR CHALLENGER?
Lillian Craig Harris and Robert L. Worden editors
Dover, Massachusetts: Auburn House Publishing Company

This collection of seven essays, edited by China specialists from the U.S. State Department and the Library of Congress, examines China's role as a leader of Third World nations. While China is much better off economically and differs in various significant ways from many Third World nations it is only a Third World country "because China assigns itself to that amorphous group." Thus China in the 1980s preaches a dual message of self-reliance and of the need for the Third World to unify against the superpowers.

The essays cover the history of China's Third World position and strategy, the economic imperatives of China's Third World policies, domestic considerations influencing China's foreign policy, China's relationship with the First and Second Worlds as well as its role in international organizations, and the present role of China's theory of the "peoples war" and the Third World. A final presentation takes the key regions of the world

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and assesses how they view China. Supplementary material includes information on China's trade by amount and region and its foreign reserves.

Dr. Robert Sutter, China Specialist from the Library of Congress, maintains that the primary concerns of China's leaders have not been support for the Third World but on efforts to guarantee Chinese national security, maintaining internal order, and pursuing economic development. In the period following the death of Mao Zedong in 1976, he observes that top priority of the present Chinese leaders has been a successful economic modernization program: "Thus, Chinese officials have geared Chinese foreign policy to help the modernization effort. Notably, China has sought a stable environment in Asia as a means to assure effective modernization and development.

The book also concentrates on China's relationship with the superpowers, especially the United States and the Soviet Union. It describes China's deterrence and defense strategy especially as China mounts world wide opposition to Soviet goals which it views as threatening China.

China's embrace of the "peoples war" concept causes it problems with some governments of the Third World, a negative it has tried to counter by aid programs to these same nations. However, some of the Third World nations see this concept as confirming their suspicions of China's aggressive nature, which constitutes a threat to the stability of their own governments. Dr. Lillian Craig Harris comments:

> There is no question that China continues to find the doctrine of people's war a useful policy at home and abroad. It is also clear that the doctrine remains politically sensitive and controversial even within the Chinese hierarchy .. Given this controversy, as well as the usefulness of people's war in selected situations, it is doubtful that China will officially renounce the doctrine of people's war in the forseeable future.(pp.135-136)

The theme of this book is one that policy analysts need to examine carefully: China, with its doctrine of "people's war,' competition for resources with the Third World, and a shifting balance of trade in China's favor, continues to court the Third World — but these factors have laid the basis for a continuing suspicion of China's intentions.

Dr. Donald J. Senese

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THE OTHER END OF THE LIFEBOAT

Otto Scott

Regnery Books, Lakeshore, Illinois

Otto Scott is a master at describing the links between the events undergirding time past and time present. Further, Robert Ruark had nothing on Scott for ability to provide simultaneously social and political commentary and African travelogue. Scott's *The Other End of the Lifeboat* is a history of South Africa and an account of the contemporary troubles of that beleaguered land. It is eclectic in its sweep, and Scott demonstrates his substantive skills as a historian who has the phylogistic skill to set forth his observations with apt parsimony and definitiveness.

Part One, entitled *Flashback*, reviews the history of South Africa, both in terms of events and the ideas that fueled them. It outlines the Rhodes-Milner period, the impact of World War II, Yalta and Potsdam, and the post-War era, in which the USSR moved into the lacuna left by the dismantling of Western colonialism.

Part Two, *Contemporary Views and Scenes*, is a peripatetic account of observations and interviews, primarily with ministers and members of the professoriat. Scott's participant observer style of presentation, illuminated by contemporary vignettes — pleasant train travel, music as if it were the 1950s, lucid radio reports, "women [who] seemed, with their soft voices and careful grooming, more feminine than ours," accounts of lunch at the Blue Room in the Johannesburg Railway station and at the Lanzerac in Stellenbosch, and of landscapes which at times appeared to be in a time capsule of their own — reads as interestingly and as intriguingly as Tolkien's account of the travels of Frodo Baggins from the Shire to Rivendell, except that Scott writes of a peril that is not the product of fantasy.

Ideas, as Richard Weaver suggested in a book of like title, have consequences. The changes which have so dramatically shaped history in the post-World War II world, making it such a foreboding place, are not something that occurred at random; rather, they are the product of belief systems. It was not the elimination of German National Socialism alone that Roosevelt sought to achieve through the involvement of the United States in World War II. The death of Western colonialism was a major goal which Roosevelt pursued doggedly, and

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which made Churchill largely a spectator at the fatal Yalta conference between Roosevelt and "Uncle Joe" Stalin.

The Soviets emerged from World War II not only with total control over most of Eastern Europe but with the committed support of the U.S. in a mutual quest to dismantle the colonial empires of Britain, France, Holland, Belgium, and Portugal. This continuing quest is poignantly seen in Eisenhower's intervention against Britain and France's attempt to resist Nasser's seizure of the Suez (just a few years before the treaty rights were due to expire in Egypt's favor) while simultaneously refusing to aid the Hungarian patriots fighting for national freedom from the Marxist yoke which had been imposed upon them by the Roosevelt-Stalin agreement.

South Africa is now in a similar position, a legal government which supports and adheres to the rule of law, but which is threatened by terrorists, organized by the ANC and ultimately serving the cause of international Marxist dictatorship. Although the Western press portrays South Africa as a land of oppression, South Africa is seen by the author as a bastion of civilization situated on the strategic southern tip of a continent in which graft, genocide and repression have become commonplace since the withdrawal of European colonial administrations. The South African press, prior to the current emergency, was the freest on the continent, just as the living standard of Black South Africans (many of them recent immigrants attracted by the relatively high wages) is the highest.

South Africa does have internal problems. Scott reports that the government in the past decade or two has resorted to many "social" programs (mostly for the benefit of Black families) of the type which have been of such wastrel conseqence in the United States. But, it is not because of any evil in the hearts of the Whites, nor any sustained and systematic export of malevolence that would stain red each yellow rose and cast a sickle about each wayward star, that has made South Africa the target of the most systematic and widespread campaign of criticism and recrimination in the world today. Readers of the newspaper and viewers of television in the U.S., Britain and Europe have been conditioned to equate the conditions in South Africa with those of the Gulag of the Soviets, and many in the media sound as though they would be very pleased if South Africa were plunged into bloodsoaked chaos, or if it became a staging area for the export of Castroism.

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Author Scott sees that the USSR still engaged in its self-avowed task of promoting revolutionary wars (under the guise of pretended nationalism) in order to incorporate the critical geography and vital mineral resources of Africa into the Soviet sphere of control. With the willing, if unwitting, support of the Western media, they work to portray South Africa as *the* evil spot of the contemporary world. That South Africa is a land of remarkable economic progress for Blacks, that it is a land into which Blacks migrated (often legally) in order to take advantage of the comparative economic prosperity and legal justice which were to be found there, that it was the most tolerant and advanced region in all of Sub-Saharan Africa, are matters that the Soviets and the Western media and governments, speaking as it were with one voice, regard as wholly irrelevant. Nor is the South African government's respect for the individuality of the different Black nations given the praise that it deserves. Meanwhile, few find fault with the mass slaying by ANC terrorists of individual Blacks and entire families of Blacks who have chosen to work peacefully with the White government. Even the leader of the Zulu nation has been marked down for assassination by the pro-Marxist ANC, simply because he leads the Zulu's demand for independence and national self-rule, instead of Marxist tyranny. The ANC wants nothing less than to subordinate all the diverse peoples of Southern Africa to the role of a single Marxist government.

The U.S.A. is represented as having a long record of betrayal of its allies, as illustrated by the delivery of the captive nations of eastern Europe delivered to the USSR In the wake of World War II, and by subsequent events in China, Hungary, Katanga, South Vietnam, and Cuba. The United States, through its own activities, is portrayed as having largely isolated itself by remaining unwilling to distinguish between its friends and its enemies. The bottom line, as author Scott puts it, is that whether one rejoices in the decimation of the West, or whether one sympathizes with its weltanschauung, it is a fact that South Africa and the United States are floating on the high seas of world history in the same lifeboat. That sea will not be calmed, he argues, by the sacrifice of yet another of the boat's shrinking body of oarsmen.

Tommy Rogers

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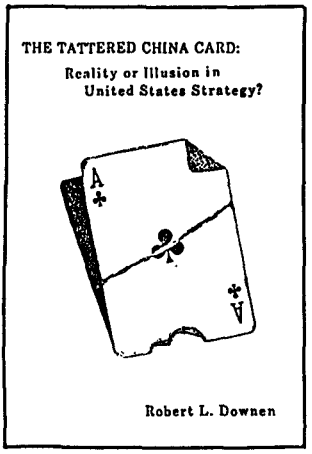

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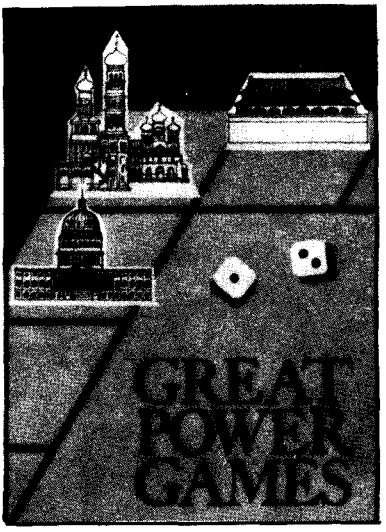

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